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ABSTRACT

This report was designed to assist the Connecticut Commission for Higher Education in its major study of the immediate- and long-range needs, resources, finances, and plans for higher education in Connecticut. This study is focused largely on ways of enabling higher education to facilitate the socioeconomic development of the various regions of the state and therefore of the state as a whole. Chapter 2 presents the recommendations from this study and a brief discussion of the rationale underlying each recommendation. Chapter 3 summarizes demographic and socioeconomic trends and projections in the state as a whole. Chapter 4 describes how the planning region of the state were aggregated into 6 geographic areas for purposes of analyzing intrastate variations of socioeconomic and higher educational need. Each of the next six chapters deals with the regional development needs of the 6 geographical areas of the state, the roles and programs of both public and independent institutions of higher education as they relate to those needs, and a characterization of those developmental needs that appear to be inadequately met. Chapter 9 summarizes the analysis of the questionnaire survey administered to a sample of high school seniors in Connecticut. In brief, it deals with questions of: after high school--what, and why? Twenty seven tables and a copy of the questionnaire used in the survey conclude this report. (Author/PG)

ED 094598

NEEDS FOR HIGHER EDUCATION RELATED TO REGIONAL AND STATEWIDE ECONOMIC DEVELOPMENT IN CONNECTICUT

Report To
Connecticut Commission for Higher Education
Dr. Warren G. Hill, Chancellor

March 30, 1971

72998

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HE 005 697

Arthur D. Little, Inc.

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This was a stimulating and challenging assignment. We trust the results of this study will assist the State of Connecticut and the further development of its fine higher education system. The ADL study team was comprised of:

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CHAPTER I

INTRODUCTION

Higher education (post-secondary and continuing education) is an important contributor to the achievement of many goals -- personal, social, cultural, and economic. It is viewed by individuals as a process for personal development and self-realization. Higher education contributes to the quality of life, to aesthetic appreciation, and to the further development of a humane society. It is an important means by which an increasingly large proportion of people are enabled to participate more meaningfully and more equitably in the social, cultural, governmental, technological, and economic life of our nation and the world. It is often regarded as the primary vehicle for skill upgrading and advancement up occupational and career ladders. It is important to national and regional economic development because of its vital impact on manpower development.

This study (and the companion study by ADL, An Assessment and Projection of the Resources and Needs of Independent Higher Education in Connecticut) was designed to assist the Commission for Higher Education in its major study of the immediate- and long-range needs, resources, finances, and plans for higher education in Connecticut. Specifically, as requested by the Commission, this study is directed at determining the higher education needs of various regions of the state in terms of their development as contributors to overall statewide development. Therefore, this study is focused largely on ways of enabling higher education to facilitate the socioeconomic development of the various regions of the state and therefore of the state as a whole.

Chapter II presents the recommendations from this study and a brief discussion of the rationale underlying each recommendation. The recommendations represent a synthesis of quantified "hard" data with more subjective data from interviews and observations together with information derived from earlier Arthur D. Little, Inc., studies and from other literature and reports.

Chapter III summarizes demographic and socioeconomic trends and projections in the state as a whole. Since a number of studies of socioeconomic trends and projected manpower needs were not analyzed or reported by component regions of the state, the results of such studies will be reflected in Chapter III and not in the chapters dealing with each of the six areas.

Chapter IV describes how the Planning Regions of the state were aggregated into six geographical areas for purposes of analyzing intrastate variations of socioeconomic and higher educational need. This chapter also treats the question of the feasibility of determining, for planning and programming purposes, variations in regional needs for socioeconomic and higher educational development.

Each of the next six chapters deals with the regional development needs of the six geographical areas of the state, the roles and programs of both public and independent institutions of higher education as they relate to those needs, and a characterization of those developmental needs which appear to be inadequately met.

Chapter XI summarizes our analysis of the questionnaire survey administered to a sample of high school seniors in Connecticut. In brief, it deals with questions of: after high school -- what, and why?

CHAPTER II

RECOMMENDATIONS REGARDING CONNECTICUT'S HIGHER EDUCATION SYSTEM

We are pleased to draw upon the conclusions of the Task Force II -- Function, Scope and Structure of Higher Education in Connecticut, established by the Commission for Higher Education, in presenting the perspective from which we make recommendations regarding higher education in the state. Our recommendations are based upon the view of the various institutions and segments, both public and independent, as dynamically interacting and complementary elements in a constantly developing system. Such relationships are seen as, to quote the Task Force II report, "critical to the achievement of maximum qualitiative and quantitative return to the State from the higher education system."

Further, we concur with Task Force II in believing that "public good" should be the primary criterion in determining higher education policy with respect to the structure and function of the system. Such a broadly conceived criterion as "public good" requires pluralistic representation in determining what is good for society. It also implies that no single concern or interest group should become the principal determinant of education policy. Thus, a concern about efficiency, economy, manpower need, or an institution's concern for autonomy or even self-preservation represents an inappropriate perspective for policy making when isolated from or given priority over other factors.

Among the several concerns reflected throughout this report are those dealing with how the State's system of higher education can contribute more effectively (and efficiently) to the social, cultural, and economic well-being of all the citizens of Connecticut. Despite the fact that most of the data in this report deal with issues of economic development and manpower needs, it is important to keep those concerns in perspective, as emphasized by Task Force II. Further, a concern which is importantly related to "public good" and which is not the principal focus of much of the data analysis by area of the state is the concern for the good of "the student." Several of our recommendations in this chapter deal with ways the system can be more responsive to student needs and interests where "students" are defined much more broadly than has been the case traditionally.

A. HIGHER EDUCATION SHOULD BE MADE MORE BROADLY AND FLEXIBLY AVAILABLE TO ALL THOSE WHO CAN AND WANT TO BENEFIT FROM IT

As stressed in the report by the Carnegie Commission on Higher Education, Less Time, More Options, opportunities for higher education and the degrees it affords should be available to persons throughout their lifetimes and not just immediately after high school. Young people should also be given more options: (a) in lieu of formal college, (b) to defer college attendence, (c) to drop out from college in order to get service and work experience and (d) to change directions while in college. More educational, and thus career, opportunities should be available to all those who wish to study part-time or return to study later in life, particularly women and older persons and those from low income families -- all who can and wish to profit from such educational experience.

The Carnegie Commission on Higher Education notes that, "society would gain if work and study were mixed throughout a lifetime, thus reducing the sense of sharply compartmentalized roles of isolated students vs. workers and of youth vs. isolated age. The sense of isolation would be reduced if more students were also workers and if more workers could also be students; if the ages were mixed on the job and in the classroom in a more normally structured type of community; if all members of the community valued both study and work and had a better chance to understand the flow of life from youth to age."

Despite some recent improvements, opportunities to obtain higher education are still distributed inequitably. Degrees are more available to the young than to the middle-aged and old. More programs are open to men -- at a time they can be readily used -- than to women. More opportunities are available to members of the higher income groups than to those in lower income ranges. Therefore, encouragement and support should be given to those people who have previously been denied higher education opportunities so that they may obtain the benefits of higher education which are in line with their talents and aspirations. Throughout their lifetime, adults should be enabled to participate more flexibly and beneficially in a greater variety of higher education experiences: degree programs, seminars, institutes, short courses, certificate programs, service activities, work-study, and cooperative programs. Both part-time and full-time participation should be possible. Expanded student aid and more effective "out-reach" programs will be required to enable members of lower income groups to take advantage of these more flexibly available opportunities.

1. We recommend extension of the use of the Higher Education Center concept and model, particularly in supporting and funding consortium arrangements or joint cooperative efforts of public and independent institutions.

In order to enable the state to deploy its higher educational resources optimally and to provide broader and more flexibly available education options based on emerging needs and interests of its citizens, we recommend the further development and continuing support of cooperative consortia, recently established in Connecticut as Higher Education Centers (HECs). Higher Education Centers can serve as a vehicle for the development of contractual arrangements between the Commission for Higher Education (CHE) and the institutional members of the HECs, including independent and two-year and four-year institutions. (A more extended discussion of the potential of contract arrangements and of suggestions for establishing them is given in the report of our companion study, An Assessment and Projection of the Resources and Needs of Independent Higher Education in Connecticut.)

a. We recommend that in a number (perhaps five or six) of service areas, Higher Education Centers be authorized and that, for each area, the CHE take the initiative in constituting a consortium council representative of all the parties-at-interest (CHE, participating public and private institutions, members of the community, and so on) as an instrument for planning and establishing the Higher Education Center for that area.

b. We recommend that each of these newly created councils be charged with the responsibility of planning, reviewing, and coordinating the cooperative programs among the institutions in that HEC. Responsibility for program approval and funding decisions and for overall coordination should remain with the CHE. We suggest the exploration and possible establishment of Higher Education Centers in the service areas of Hartford, New Haven, Bridgeport, Norwich-New London, in addition to the HEC in Waterbury.

c. We recommend that, after approval of the establishment of new HECs, each consortium council be separately incorporated and empowered to receive and disburse funds from federal, state, and private sources. Each HEC should be able to contract with the CHE for the delivery of specified programs or services. Each of the institutions participating in the consortium would, of course, secure the consent of its governing board (which should remain fiscally autonomous) prior to any contractual agreement with the CHE through the Higher Education Center.

d. We recommend that an executive officer or consortium coordinator be designated for each HEC and that CHE staff support be made available to facilitate communication, planning, evaluation, and coordination with and among the HECs.

These recommendations should not affect the possibility of contractual arrangements negotiated directly between the CHE and individual institutions (public or independent) for specific programs, services, or facilities use. Public Act #627 is a valuable precedent in this regard. The recommendations above are primarily to facilitate (a) cooperative planning among neighboring institutions in the efficient delivery of programs and services specifically geared to meet local as well as statewide needs, and (b) coordination so as to reduce wasteful duplication and competition and also enlarge the options available to students.

As we view them, HECs are excellent instruments for more sensitively responding to student needs and interests. A student in one of the HEC service areas should have a much broader range of options and electives to choose from as they are made available through cooperative consortium arrangements. Program articulation between two- and four-year institutions should be improved to the student's benefit. He should be able to transfer into more appropriate programs more quickly and with less trauma if he happens to enroll in courses either too demanding for him or outside his particular interests. His counselors should have more information to share with him regarding the wider array of options available to him in cooperating institutions. Dropouts should be reduced since students can much more easily move to alternate programs more appropriate to their particular talents and interests; they are less likely to be confronted with the Hobson's choice of dropping out or flunking out. (The Carnegie Commission on Higher Education estimated that 60% of students entering programs of higher education drop out before completing their program of study.) Consortium relationships between technical colleges and community colleges in a HEC should help to reduce the approximately 60% dropout rate of the technical colleges by enabling students having difficulty with the relatively demanding Associate degree technology programs to move without serious trauma to a less demanding but still rewarding program in a neighboring community college.

Involvement in a HEC should facilitate the orientation of member institutions to the educational needs of the local service area. The use of a local consortium council to formulate plans and endorse cooperative arrangements will help assure more attention to the "public good" when pluralistic representation is afforded on those boards or councils. The establishment of such HECs actually makes such planning mandatory in order to arrive at inter-institutional agreements. The councils should not be regarded or attempt to function as duplicative governing boards.

The consortium arrangements within HECs also have the potential of yielding significant economic advantages. (The Worcester Consortium in Massachusetts can document this point.) Costs can be reduced through pooled purchases, joint library holdings, faculty exchanges, reduction of the number of classes with low pupil-teacher ratios, shared participation in larger projects and so on. Costs are also reduced because a good deal of existing program duplication and overlap can be eliminated. In addition, such consortia can improve the utilization of facilities.

The increased orientation to local needs also facilitates the development of more problem-oriented programs and flexible degrees as opposed to the more traditional departmental programs and degrees in a specific discipline.

2. Innovative programs and arrangements such as "external degrees" should be developed and offered in order to encourage life long learning and increased intermingling of study and work.

The quality of life of Connecticut citizens can be further enhanced, as well as their economic well-being, if more flexible provisions are made for interspersing study and work (a more extended discussion of this topic is presented in the report of the Carnegie Commission on Higher Education, Less Time, More Options). Such provisions could include the establishment of: Regional Counseling and Testing Centers (testing for course credit toward degrees) as recommended by Task Force I; independent study, sometimes in combination with tutorials, followed by comprehensive examinations; cooperative programs between higher education institutions and business, industry, governmental agencies, schools, hospitals, and the like; work-study programs; use of experts in certain lines of endeavor as participants in the teaching process; and so on. In Japan, the Ministry of Higher Education intends to establish an "open university" by 1972 relying heavily on video cassettes that would be available on a rental basis. An exciting description of innovative college programs established for paraprofessionals currently employed in human service agencies was published by the New Careers Development Center of New York University in October, 1970. The report is entitled An Examination of College Programs for Paraprofessionals.

The College Entrance Examination Board now offers its College Level Examination Program (CLEP), which is to "enable individuals which have acquired their education in non-traditional ways to demonstrate their academic achievement." By the fall of 1969 nearly 400 colleges stated they would give credit through the program, although policies on amount of credit available and minimum acceptable scores varied among the colleges. There are now 59 CLEP test centers in the larger cities. Tests are being given in more than twenty subjects, with tests in several additional subjects being developed.

In 1921 Antioch, a liberal arts college, alternated work and study among its degree requirements. Today over sixty American colleges include some type of work or service experience as an integral part of their educational programs. In most American programs the student is college-based rather than work-based, as is the case in the English "sandwich" programs. In the New England area, Northeastern University has the most highly developed and successful cooperative programs. We urge the CHE to encourage and support one or two institutions in Connecticut to capitalize on the NU approach. But such an endeavor cannot be undertaken as an appendage or an ancillary activity; to be successful requires significant changes in basic institutional processes, schedules, and procedures.

3. We recommend legislation which would provide grants for part-time graduate and undergraduate students in independent institutions.

We recommend grants to part-time graduate and undergraduate students equal to three-fourths of the difference between tuition at the independent institutions and comparable charges at the state colleges, without contribution toward the administrative overhead expenses of the participating institutions. Such a student aid arrangement should expand the options available to students, provide them with more flexible ways of obtaining desired education, capitalize more fully upon existing facilities, and assist independent institutions by increasing the use of and the income from their facilities. The Connecticut Conference for Independent Colleges supports such a proposal.

B. SIGNIFICANTLY MORE RESOURCES SHOULD BE DEVOTED TO INSTITUTIONAL RESEARCH IN CONNECTICUT

In line with the recommendations of Task Force III, we recommend that a fund be appropriated annually in an amount equal to 1% of the operating budgets of the four constituent segments in order to permit the CHE to mount appropriate research and evaluation studies. We suggest that the following issues are important enough to the State to warrant systematic exploration and evaluation:

1. The development of means for more adequately sensing and defining needs to which educational programs should be responsive;
2. Studies of the effects of differential applications of resources including different staffing patterns, pedagogical arrangements, and educational program innovations such as the External Degree Program;
3. Evaluation of the relative advantages and disadvantages of HECs over more traditional autonomous institutional relationships;
4. Research aimed at improving the effectiveness of higher education in the State.

Some research efforts should be localized in individual institutions, others should be managed at the governing board level, and yet others should be undertaken by the Commission itself. However, the CHE should coordinate and monitor such efforts and insure appropriate dissemination of results for use in planning and decision-making.

C. A MANAGEMENT INFORMATION SYSTEM SHOULD BE DEVELOPED AND ESTABLISHED BY THE COMMISSION FOR HIGHER EDUCATION

Such a management information system should be established in concert with the constituent segments of higher education. It should be designed and implemented in such a way that independent institutions can also contribute to the development of the MIS format and participate in its use. Such an information system is necessary for overall system planning, for effective analysis of costs, and for study of the effects (including benefits) of differential resource allocations and programming, including the use of contract arrangements with independent institutions and HECs.

While more specific suggestions for a basic information format are presented and discussed in our companion report of the study of independent institutions of higher education institutions in the state, it is appropriate here to list several important elements of such an MIS. The planning/information system should define:

1. The organizational entity responsible for collecting information and for formulating plans;
2. Its functional relationships with associated institutions;
3. Data gathering techniques for assessing educational needs, the status of present operations, and output characteristics;
4. Standardized criteria by which services can be described;
5. Common data parameters which will enable information to be collected on a uniform basis for judging resource adequacy/need;
6. Data gathering techniques for producing information of the type needed when it is needed;
7. Techniques for making forecasts;
8. Criteria for determining priorities; and
9. The nature of the decision/time matrix which will enable planning decisions to be made for short term, intermediate term, and long-range periods.

Due to the special characteristics of higher educational institutions the CHE is unusual among the state agencies in its need for a specialized management information system. As the State of Connecticut develops its Program Planning and Budgeting System, the higher education information system should be developed by the CHE in parallel form and be compatible with it.

D. RECOMMENDATIONS WITH RESPECT TO THE ESTABLISHMENT OF NEW INSTITUTIONS OF HIGHER EDUCATION IN CONNECTICUT

1. We recommend that high priority be assigned to the establishment of one additional Regional Community College in Area C, the northeastern part of the state.

The only region of the state in which most residents are not within easy commuting distance of a non-selective, low tuition, i.e, "free access" college, is the northeastern corner. The need for a community college in that area has been clearly established (see the Arthur D. Little, Inc., report: *A Suggested Plan for Developing Connecticut's Community College System*, April, 1970); citizens of the area have done a fine job of planning and working for it; such institutional locations are needed to counteract the powerful and debilitating trend toward centralization by positive efforts toward planned regional development; and it was authorized by the 1969 session of the General Assembly.

While almost every community would like to have a college located in its boundaries, such a course is economically impossible. Connecticut already is first among all states in affording easy access to higher education institutions. Considering the scarcity of appropriated resources to support both existing and new institutions of higher education, we do not recommend the establishment at this time of any other new community colleges except the one in northeastern Connecticut.

2. We recommend that high priority be assigned to funding and constructing appropriate facilities for existing community colleges.

There is a critical need for improved facilities in already established community colleges. Needed program development is significantly inhibited by the lack of adequate facilities. Delay in the construction of such facilities is costly. Construction costs are inflating approximately 15% per year at the present time.

3. We recommend immediate construction of the authorized State Technical College in the New Haven area.

There are significant unmet needs for technicians in the New Haven area. A technical college has been authorized for this area but apparently construction is being delayed because of problems locating and acquiring a site. We urge speedy resolution of these problems in order to meet significant and long-standing needs. The construction of the new technical college in this area should further postpone any need to establish a new community college just northeast of New Haven.

It is further recommended that the establishment and development of the new technical college in New Haven be accomplished in the context of its membership in the recommended consortium of institutions in the New Haven area comprising a Higher Education Center. Early involvement of the technical college in this consortium will help to assure maximum complementarity of offerings with those of other institutions in the area and effective articulation of programs and courses among such institutions. Student interchange should be encouraged and facilitated between technical colleges and community colleges so that a community college student could take some technical courses and technical college students could take some liberal arts courses as options or electives. Under present conditions and arrangements such exchange is difficult if not impossible.

4. We recommend that the CHE conduct explorations with four-year independent institutions in the Bridgeport area, in the southwestern part of the state (Area F), for the purpose of contracting upper division and graduate programs and courses.

The southwestern part of the state is quite heavily populated and yet it has no public four-year college. Existing facilities and resources at Fairfield University and the University of Bridgeport possibly could be made available to serve additional students under appropriate contractual arrangements. We urge that any contractual arrangements emphasize part-time opportunities as well as full-time, and evening programs in addition to the usual day offerings.

In addition to regular program offerings, we suggest that contract arrangements also be explored which would enable Fairfield and/or Bridgeport to offer programs for training urbanologists and urban generalists, those individuals prepared to deal with the many and interlocking problems of core cities and of the agencies concerned with those problems.

5. We recommend that the planned and authorized expansion of the Stamford Branch to a four-year institution be deferred.

If the State Colleges' projections of student demand for the next decade or so are correct, there may develop a requirement to build a public four-year college in the southwestern part of Connecticut. However, at the present time we are convinced that it would be much more economical, and in the best interests of the state as well as of independent institutions in the "corridor", to provide for at least near-term demand through contractual arrangements by the CHE with those independent institutions.

We are not at all convinced that the existing University Branch in Stamford is the most likely site for expansion to a four-year college. Apparently the State Health Department has expressed doubt about the sewage/drainage capacity of the site and concern about resulting pollution in the nearby river. Moreover, in a survey of students at the Stamford Branch it was discovered that only about 100 (20-25%) expressed an interest in continuing their education at the Branch. Even though the popular MBA program in the evening draws significant numbers of students, the facilities are not now used to capacity during the day. Enrollment at the Branch has not increased significantly in recent years. Fall enrollment head counts are given below for the last seven years:

1964 -- 548
1965 -- 583
1966 -- 517
1967 -- 520
1968 -- 548
1969 -- 561
1970 -- 599

E. SIGNIFICANT EMPHASIS AND SUPPORT SHOULD BE APPLIED TO PROGRAM DEVELOPMENT IN SEVERAL AREAS OF CRITICAL NEED

1. The most critical need in the state is for the development and training of personnel for the health service occupations. In practically every one of the six areas examined, the most significant unmet need for trained manpower was for paramedical personnel. These needs extend across hospitals, nursing and convalescent homes, rest homes, public health services, employees' health clinics, and offices and practices of private physicians and dentists. Additional programs should be established at the two-year level, the four-year level, and at the graduate level. The shortage of doctors and dentists can be ameliorated in part by the more effective use of trained paraprofessionals. It is certainly in the best interest of the state to move rapidly and effectively to prepare sufficient individuals for the delivery of adequate health care to all who need it. Statewide needs are discussed in Chapter III.

2. As implied above, there is also a significant need for more medical and dental professionals. Few women are being trained in these professions. The planned annual output (48 doctors and 48 dentists) of the University's Medical-Dental School and Health Center in Farmington will not by any means meet projected needs -- 740 dentists and 2,580 physicians and surgeons in the seven-year period from 1968 to 1975.

3. The higher education institutions in the state are not yet affording effective participation in their programs to adults, Black or Spanish-speaking persons, people from low income families, and employed persons. There is need for a new career development scheme for training and upgrading paraprofessionals on a career ladder. While the utilization of paraprofessionals is generally accepted in many human service agencies, career advancement and preparation on-the-job is less so. The October, 1970, report by the New Careers Development Center of New York University, An Examination of College Programs for Paraprofessionals, presents descriptions of a number of such programs being offered in 162 institutions where nearly 20,000 paraprofessionals are being trained. The apparent success of these programs warrants at least experimentation with such programs in Connecticut if not widespread adoption and implementation.

4. As indicated throughout this report there is a significant need for additional technicians in the state's industry. Further, such programs should be more effectively advertised for women. Only 4% of the state's employed technicians are women. Provisions for their education and training should be broadened. Over 70% of companies employing technicians and contacted in a survey said they would be willing to hire female technicians.

The programs of the technical colleges should be made more flexible and responsive to the student interests and capabilities in order to ameliorate the approximately 60% dropout rate now experienced. One way of preventing this failure rate is to offer more one- and two-year certificate programs as alternatives to the more demanding two-year Associate degree programs. In addition, more cooperation and collaboration between technical colleges and community colleges should be effected to enable students to move from one institution to the other without the trauma of failure or becoming disenchanted with the educational process.

Throughout many studies of the need for technically trained people was the finding that a good many employers believe they have jobs which require more than a high school education but less than the Associate degree preparation. In other words, there are some technically related jobs in a variety of fields for which few public post-high school institutions are offering preparation and training. There are a number of proprietary vocational schools in the state which prepare people for some such positions, but a good many are not accredited and also many individuals cannot afford their cost.

5. As indicated earlier there is a recognized need for programs to train people to deal more effectively with urban problems. Programs should be offered at the Master's, the Bachelor's, and the Associate degree levels. The need is for persons with multi-disciplinary training which can be applied to the solution of the variety of interacting

urban problems. Such trained personnel have been labelled "urban generalists" and are being sought by agencies of local and state government, regional planning agencies, utilities, community service agencies, and so on. Only a few institutions have as yet offered such programs but the need in Connecticut is estimated at approximately 200 such trained people.

6. There are acute unmet needs for specialized teachers. Such needs are found principally in the areas of special education, vocational education, counseling, and preparation of teachers and administrators for community colleges. All too few of this country's teacher training institutions are graduating teaching personnel equipped to work effectively in core city schools. Few teachers as yet are prepared to operate effectively in the "open school" arrangements or informal classroom processes now gaining favor. More effective collaboration is needed in joint programs between teacher training institutions and local school districts, particularly in in-service training and in supervision of student teachers. As pointed out by Task Force I, the traditional curriculum and tracking arrangments for vocational education students are not working. Dramatic reforms are necessary in rebuilding curricula to involve career considerations, orientation to the world of work, and use of more relevant and informed counseling resources by the K-12 school system so as to enable students to make informed choices regarding their educational and career preparation.

7. Associated with the above two items, there is an apparent need for more active involvement of some and particularly the public higher education institutions in community service activities and in the study and resolution of social and urban problems. The involvement of the faculty and students of Southern Connecticut State College in the activities of the New Haven School System is a noteworthy exception. Over 4,000 students have been involved in community operations and student teaching in the inner city schools. Last year students participating in the community service program contributed a total of 81,000 hours of time. Also, Central Connecticut State College has a tutorial plan for children in the inner city schools of New Britain and Hartford. Approximately 450 of the college students voluntarily participated in seventeen different programs in New Britain and one in Hartford. We urge that such activities be extended and expanded for the mutual benefit of the institution and the community in which it is located. We support the proposal for The University of Connecticut to establish an Institute for Public Service.

F. WE RECOMMEND A SIGNIFICANTLY EXPANDED STUDENT "OUT-REACH" PROGRAM TO ASSIST MORE LOW INCOME AND MINORITY STUDENTS TO SHARE IN THE BENEFITS OF HIGHER EDUCATION; AND WE RECOMMEND A GREATLY EXPANDED STUDENT AID PROGRAM TO ENABLE MORE DESERVING STUDENTS TO BEAR THE INCREASING FINANCIAL COST OF OBTAINING FURTHER EDUCATION. TO GENERATE FUNDS TO HELP DEFRAY THE INCREASED COSTS OF SUCH EXPANDED PROGRAMS, WE RECOMMEND THE ESTABLISHMENT OF TUITION INCREASES AT GRADUATED LEVELS IN THE PUBLIC INSTITUTIONS.

This recommendation is made in support of our first recommendation: Higher education should be made more broadly and flexibly available to all those who can and want to benefit from it. At present a high proportion of such potential beneficiaries are denied the opportunity of higher education because of its cost. President Nixon has commented in a public address that individuals from families with annual incomes of $15,000 or more are five times more likely to attend institutions of higher education than are those from families with annual incomes of $3,000 or less.

In each of Connecticut's larger cities from 20 to 25% of the families have incomes of $3,000 a year or less. The New England Board of Higher Education anticipates that there will be 33,500 Black and Puerto Rican persons in Connecticut in the 18-24 year old college age group by 1980. The unemployment rate in that population group is generally double the statewide average for that age group. There is an intense need for post-high school education to be made effectively available to those persons who can benefit from it in such groups who have traditionally been denied equal access to the opportunity because of income limitations and the handicaps resulting from inadequate earlier education.

Some efforts have been launched in Connecticut to make educational opportunities more equally available to all: the Connecticut Extended Educational Opportunity Program Committee, the Connecticut Talent Assistance Cooperative (CONNTAC), the Commission on Aid to Higher Education; the State Scholarship Commission, the Connecticut Student Loan Foundation, the Connecticut Faculty Talent Search (CONNFACTS) and so on. But such efforts and instruments need to be extended and more amply funded. The fact remains that only a small proportion of low income and minority students are now in Connecticut institutions of higher education. Dr. Dorothy Goodwin reports that a 10% survey sampling of The University of Connecticut students last spring revealed that: (a) only 7.7% of the students came from families where neither parent went to high school; and (b) that the few Black students on campus were almost all from families with high educational attainment. And the costs to students are escalating rapidly. The Educational Testing Service has just raised its recommendation for a cut-off level of family income below which families should not be expected to contribute to their children's education from $4,500 per year to $5,800 per year. The need for expanded programs as recommended is critical.

However, because of increased pressure to keep the public costs of higher education from impacting so heavily on the tax structure, the probability of obtaining public funds in amounts sufficient to meet the need is low. Therefore, we are recommending tuition increases, the revenues from which should be dedicated to student aid, an extended outreach program, and to further program and service development.

A further rationale for tuition increases is that most of Connecticut's families can afford to pay more for their children's higher education than they now do. The state's per capita income is one of the highest in the nation while tuition charges at public institutions and public financial support for higher education are well below average for the nation.

In the last ten years appropriations for public higher education in Connecticut increased from $13.7 million in 1960-61 to $97.3 million in 1970-71. An earlier CHE estimate of state support for higher education in the decade of the 1970's indicates that the financial needs of the system can be expected to increase four times that of existing levels. In spite of increased support in recent years, in 1968-60, Connecticut ranked 43rd among the states in its per capita support for higher education ($38.30). An additional $11.44 per capita would need to have been added to reach the national average.

In February, 1970, CHE was asked to prepare an estimate of the financial support requests for higher education likely to be made in the decade of the 1970's. The table below displays the estimates for both capital and operating funds.

TABLE 1

Estimated Costs, 1971-72 Through 1980-81 for Five Constituent Units

	OPERATING				CAPITAL*				
			FIVE UNITS						
	FOUR UNITS	CHE	ANNUAL	BIENNIAL	RCC	SC	TECH. COL.	UN.OF CONN.	TOTALS
			(amounts in millions)						
1971-72	$127.00	$ 5.97	$132.97		$ 73.7	$57.0	$13.7	$18.8	$163.2
1972-73	146.90	8.37	155.27	288.24					
1973-74	168.90	11.62	180.52		119.5	57.0	3.5	44.5	224.5
1974-75	193.00	13.07	206.07	386.59					
1975-76	217.40	14.81	232.21		104.5	57.0	18.9	24.8	205.2
1976-77	246.50	16.69	263.19	495.40					
1977-78	275.80	18.58	294.38		46.2	57.0	-	25.2	128.4
1978-79	308.60	20.58	329.18	623.56					
1979-80	341.10	22.78	363.88		60.6	57.0	-	20.4	138.0
1980-81	386.10	25.05	411.15	775.03					

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*Estimates of capital requirements for academic and related buildings (housing and other auxiliary buildings and construction of the Health Center are not included) as prepared by representatives of the constituent units, 1971-81.

The State of Connecticut has historically supported a philosophy of low cost higher education. Three constituent segments of higher education have established tuition levels of $100 per academic year to Connecticut residents, while the fourth charges no tuition to in-state students. Each of the units has fees of varying amounts to support selected student services and other programs. The current levels for 1970-1971 are:

TABLE 2

	Tuition		Fees		Room	Board
	In-State	Out-of-State	In-State	Out-of-State		
Regional Community Colleges	100	300	30-40	30-40	-	-
State Colleges	100	700	72-90	72-90	250-300	480
Technical Colleges	100	300	15	15	-	-
University of Connecticut	-	300	290	690	420-500	520
Health Center	600	1300	-	-	-	-

Connecticut's charges are low even when compared with tuition and fee charges two and three years ago throughout the country:

TABLE 3

RESIDENT STUDENT CHARGES
(TUITION AND FEES)
1968-1969

AMERICAN ASSOCIATION OF LAND-GRANT COLLEGES AND UNIVERSITIES

Mean	$ 363	393
Median	352	360
Range		
High	2050[1]	2245[2]
Low	144[3]	75[4]

1.) Cornell
2.) MIT
3.) University of Puerto Rico
4.) Federal City College

Consonant with the reasoning of Task Force III, we believe that tuition should be related at least roughly to the cost of education obtained. Therefore, we recommend that tuition be established at the same level for all lower division students (those in the first two years) in all public higher education institutions and segments. This would eliminate any "price wars" among institutions or inequities among segments. In-state students in State Technical Colleges and Regional Community Colleges would pay the same tuition as that paid by in-state students who are freshmen and sophomores in State Colleges and in The University of Connecticut and its Branches. We suggest that this lower division tuition for in-state students be established at about $300 per year. (As noted in the table above, the median resident student charge [tuition and fees] among members of the American Association of Land Grant Colleges and Universities was $360 in school year 1968-69.) Upper division in-state students (juniors and seniors) in The University of Connecticut and the State Colleges should pay somewhat more tuition, perhaps $400 per year. This is approximately in line with the recommendation of Task Force III that tuition charges be established at about 20% of actual operational costs. (In 1966-67, student tuition and fees constituted 19.4% of receipts for all public universities and 22.3% of receipts for all public colleges in the nation.) Tuition for in-state students in the more costly Master's degree programs should be incrementally more, perhaps $600 per year. We recommend that out-of-state students attending all institutions in each segment should be charged at least twice the in-state student tuition costs. Tuition charges for low income students could be reduced or "forgiven" to help avoid their becoming a further obstacle.

We strongly endorse the recommendation of Task Force III that such tuition collections be dedicated to the support of higher education in the state. Much of the collected monies should be allocated to the necessary substantial expansion of student aid (scholarships, work-study programs, subsistance assistance, and the like). Some tuition collections could be allocated to the boards of each higher education segment for further institutional and program development, and some might be used by the CHE for development and coordination of the state's system of higher education. It is important, however, that the allocation of such tuition collections be managed under the aegis of the CHE in order to assure equitable distribution and appropriate use in line with established plans and approved programs.

We cannot over-emphasize the need for significant expansion of student aid programs if the recommendation for tuition increases is implemented. As mentioned in other contexts in this report, institutions of higher education in Connecticut, like those in most other states, as yet are not serving very many students from low income minority groups. Unless significant student aid is afforded to students from lower income families very few of them will be able to afford the expense of attending an institution of higher education.

It is estimated that the out-of-pocket expenses for attending the University at Storrs is approximately $2,000. To this amount should be added approximately $4,000 for income which is foregone by attending the University instead of working. Significantly more students will require financial aid and in significantly greater amounts than has been true in the past.

State-funded student financial assistance available to Connecticut residents has been relatively modest. The amount of funds made available has limited awards to a maximum of 2% of high school graduates. During the 1969-1970 academic year, state funds totalling $1.2 million aided approximately 2,100 students. This averages out to about $570 per student per year. In 1970-1971, $1.7 million is being made available.

In the words of the Task Force III:

> "The Commission for Higher Education has adopted a goal that no student in Connecticut who is qualified or qualifiable and who seeks higher education be denied the opportunity for such education because of his economic situation. Implementation of this goal will require greatly increased levels of support, particularly if students are assessed tuitions that represent from 20 to 50% of operating costs."

A. RECOMMENDATIONS FROM TASK FORCE I

Task Force I was chartered by the CHE to study issues of socioeconomic, manpower, and regional needs. Since the ADL study team's work significantly overlapped that of Task Force I, we worked in concert. We attended Task Force meetings, shared data, and contributed to the discussion of issues. It was agreed that Task Force I would focus largely on longer range policy issues and that the ADL team would deal importantly with some of the more specific short-range issues. But since the work of Task Force I is so integral to ours, and since we strongly support its recommendations and believe those recommendations mesh effectively with ours, we present below a brief summary of those recommendations which replicate, complement or extend ours.

1. Find ways to encourage the timely introduction of innovations into the curriculum and into methods of operation and techniques of teaching, at least on a pilot basis.

2. Provide young people with more options of post-high school experience.

3. Adopt and promote the concept of education as a unified lifetime experience and make it easy for people to move through the system without putting barriers, in the form of unnecessary requirements, in their way.

4. Provide more opportunities and encouragement for women to be educated for the professions, government and service positions and technical jobs.

5. Avoid setting up new programs that will duplicate unnecessarily those already being offered by neighboring institutions.

6. Explore ways of achieving broad, general cooperation between public and private institutions, through consortia, contracts or other means.

7. Encourage the use of community resources off-campus to augment the resources of higher education.

8. Encourage the setting up of an External Degree Program on a pilot basis.

9. Emphasize preparation for broad work categories or clusters of jobs, whenever possible, rather than for specific jobs.

10. Upgrade the image of vocational education and deepen appreciation for the idea that creativity can be expressed by means other than words.

11. Encourage a better mix of liberal arts and vocational education, varying the emphasis according to each individual's life goals.

12. Extend the training of counselors in contemporary approaches, including the use of the computer as a counseling tool. This "blanket" recommendation includes suggestions for the wider dissemination of information, introduction of counseling into the elementary grades, and greatly extended programs for training teachers and counselors for the elementary and secondary schools.

13. Make up-to-date personal counseling available to all segments of the population, not just students, through regional centers, supported by a computer service. The computer would match up qualifications and preferences of applicants with the measurable characteristics and requirements of the State's institutions of higher education.

14. Appoint a study team to review admissions requirements and programs in light of the changes taking place in job requirements and personal expectations.

15. Encourage the acceptance by all institutions of higher education, but especially by the community colleges, of a certain number of students who give evidence of potential even though their background does not fall into traditional kinds of preparation.

16. Participate with other agencies, as appropriate, in ongoing studies of socioeconomic trends, projections for both long-range and short-range implications for education, and a continuing review of faculty and curriculum to ascertain how they are fulfilling the needs.

17. Promote a paraprofessional career ladder that recognizes workers' capabilities and helps them to get further education while working.

18. Expand continuing education program to include more suitable courses at more locations, making the same resources available to those who cannot carry a full-time, day-time program leading to a degree as to full-time students.

19. Initiate closer working relationships with agencies in the State concerned with elementary, secondary, vocational continuing education, in order to coordinate policies and activities, since what happens at each level of the total system affects all the others.

20. Encourage the establishment of a voluntary Faculty Service Corps to work in community service, in field projects, in overseas teaching or in other practical service positions, with volunteers returning to the campus to share their firsthand experiences with students.

CHAPTER III

CONNECTICUT'S STATEWIDE DEMOGRAPHIC, ECONOMIC, AND MANPOWER TRENDS AFFECTING NEEDS FOR HIGHER EDUCATION

Data on state demographic patterns, economic trends, and projected manpower needs come from a variety of sources. The studies and analyses from which such data are derived vary in their comparability as to methods used and certainly in their recency and time span of forecast. Task Force I, established by the Commission for Higher Education (CHE), was chartered to make best estimates of the social and economic trends of Connecticut, estimates of the demand for higher education as reflected in past enrollment trends and future expectations, and estimates of what new kinds of manpower will be needed.

In our work for the CHE and with Task Force I it was agreed that, since data sources (and data problems) would be the same for Task Force I as for the Arthur D. Little, Inc. (ADL) study team, Task Force I would focus largely on the analysis of statewide trends and needs, and the ADL team would focus primarily upon trends and needs in six specific geographical areas of the state. ADL team members participated in Task Force I meetings and shared in the discussions regarding data and emerging needs. We have reviewed the Draft Report of Task Force I; we have checked the data sources used by Task Force I and we find no need to differ with the analyses, projections, and interpretations made by Task Force I; and we support its conclusions and recommendations. Therefore, rather than present an independent formulation of statewide demographic and socioeconomic trends we have elected to use in this chapter much of the material published by Task Force I in its December, 1970, Preliminary Draft Report, NEEDS: SOCIO-ECONOMIC, MANPOWER, REGIONAL. We have added certain additional information and the sources of those additions are indicated.

Data from the 1970 United States Census would have been enormously useful in this study. However, except for some preliminary reports of population growth and distribution, 1970 census data tapes and detailed data breakdowns were not available during the course of this study.

A. POPULATION

In the decade 1960-70 the population of the United States rose from 179 million to 200 million, a gain of 11.7%. During the same period Connecticut's population increased approximately half a million -- a rise of 18% -- and now totals just under three million. As elsewhere in the nation, most of the growth was in the suburbs, surrounding the major centers of population. The nonmetropolitan areas in the 1960's grew faster than the metropolitan areas.

Each of the state's three major cities -- Bridgeport, Hartford and New Haven -- lost residents. A notable exception to this trend is Stamford. Stamford gained more than 15,000 and passed the 100,000 mark for the first time. Danbury showed the largest percentage gain -- more than 120% -- and has approximately 40,569 residents.

The major cities' losses were more than compensated for by the overall growth in the counties in which the urban centers are located. The table below shows what has been happening numerically:

TABLE 4

Connecticut	Estimate in Millions
1960	2.5
1965	2.8
1970	3.0
(1975 Projected)	(3.4)
(1980)	(3.7)

Cities	1960	1970
Bridgeport	156,784	155,359
Hartford	162,178	155,868
New Haven	152,048	133,543
Stamford	92,713	107,907
Waterbury	107,130	106,431
Counties		
Fairfield	653,589	785,603
Hartford	689,555	808,246
Litchfield	119,856	141,066
Middlesex	88,865	114,148
New Haven	660,315	733,846
New London	185,745	220,037
Tolland	68,737	102,895
Windham	68,572	82,109

Source: 1970 Census of Population Preliminary Reports

Increases during the 1970's are expected to follow the already established pattern, with further outward growth from the major cities. Regionally, the heaviest concentration of population will continue to be in the urban belt from Fairfield County through the South Central Region to the Capitol Region, with a sharp percentage gain expected in the Housatonic Valley Region. There will be noticeable gains also in the Southeastern Region.

Thus, a dense population corridor is building up along the Connecticut portion of the Boston-Washington corridor. Geographically, this population corridor borders Long Island Sound from the New York state boundary to New Haven, then extends northward beyond Hartford. Outside this broad spine population clusters are also forming in the Naugatuck and Thames Valley areas.

1. More 18-24 Year Olds

The implications for higher education of the concentrations of population cannot be overlooked. Nor can the fact that the age of the population will decline substantially between now and 1980, with significant growth in the under-35 category. There will also be an increase at the older end of the scale.

The Connecticut Labor Department estimates that there will be 381,000 in the 18-24 year old bracket by 1975, an increase of 110,000 in seven years. This is a reasonably firm figure, since most of these young people are already attending elementary and secondary schools in Connecticut.

While most of the population increase will come from births, we can also expect substantial in-migration from other states and abroad. It is anticipated that the 1970 census will show Connecticut to have gained 150,000 to 200,000 residents from other areas during the decade just completed and another 170,000 new arrivals can be expected in the 1970's.

2. Change in the Mix

Perhaps more significant than numbers at least in the cities, is the change that is taking place in the demographic composition of some Connecticut communities.

In 1960 Connecticut was predominantly white with only 4.4% non-white. The largest proportion of Connecticut's foreign stock was of Italian origin, 24.1%; the next largest segment -- 12.5% -- was from Canada; and third was Poland with 12%. Other national origins included the United Kingdom, 8.4%; Ireland, 7.7%; and Germany 6.6%.

Many of today's in-migrants are Black or Puerto Rican. The State Commission on Human Rights and Opportunities estimates Connecticut's present Black and Puerto Rican population at 8-10% of the total, or 240,000 to 300,000. In other words, this segment of Connecticut's population has more than doubled in the past decade.

In the college age group, 18-24, the New England Board of Higher Education anticipates a Black and Puerto Rican population in Connecticut of 33,500 by 1980.

This influx is most apparent in the cities where it is accompanied by an exodus of whites to the suburbs. For example, about one-third of Bridgeport's population is Black and Spanish-speaking Puerto Rican. In the city's public schools, 54% of the children come from these backgrounds (plus nearly 500 non-English-speaking Portuguese), yet only a handful of the professional staff belongs to any of these ethnic groups. One-third of all high school students drop out and few minority group students graduate. The unemployment rate of these unskilled young people tends to run double or triple the national average, especially during periods of economic adjustment such as that experienced in 1969-70. This concentration of minorities in the cities is creating a disproportionate need for post-high school education in the large metropolitan areas. It also requires special outreach programs to insure that all who need and can profit from that education can take advantage of it.

Similar, though not identical population shifts are taking place in Hartford, New Haven, Stamford and elsewhere. How the elementary and secondary schools respond depends to a large extent on our institutions of higher education and in turn affects them tremendously. Problems include not only the numbers and qualifications of the students who apply for post-high school education, but also the type of teacher education that must be offered, the need to provide additional teachers and counsellors who can relate to minority groups, and in the numbers of teachers who must be prepared to teach in the community colleges. The questions of admissions policy, equality of educational opportunity, and student aid are particularly difficult and of concern at all educational levels. So are community relations.

These are some of the reasons why Task Force I felt it was unrealistic if not impossible to divorce its considerations of higher education from other phases of learning. Instead, it chose to look at higher education in the context of the total educational experience, from kindergarten through continuing adult education, but with emphasis on the post-high school continuum.

3. How Well Educated

In 1960 the median number of years of school completed by Connecticut's adult population was 11.0 compared to 10.6 for the nation. The proportion of the school age population (five to 24 years old) enrolled in schools in Connecticut in 1960 was 75.9%, compared to 71.7% for the nation. In the same year 12.3% of the state's males 25 and over had completed four or more years of college. Among the 50 states Connecticut is second in the number of Ph.D.'s per million population.

Many residents, however, got their degrees outside the state. The majority of holders of advanced degrees among New England's population, according to the New England Board of Higher Education, did not get their college education in New England.

As the level of education increases, studies show, so does the rate of migration and the distances covered. Thus, achieving a perfect balance between job needs and personnel educated to fill those needs can never be achieved within a state; this does not make the goal any less desirable.

Nationally school enrollment in 1969-70 was 47.2 million compared to a figure of 36.1 million in 1959-60. In Connecticut, the public school enrollment was 676,000 compared to 481,000 pupils in 1959-60. In the fall of 1970 126,680 persons enrolled in the state's public and private institutions of higher education. Of this number 39,074 attended only part-time. Approximately 19% of enrollment in full-time undergraduate programs in fall 1970 was in the two-year institutions, both public and private.

Total school and college enrollments in Connecticut, it is conservatively estimated, will have grown to at least one million by 1980.

4. Out-Migration

Not all of Connecticut's high school graduates, however, attend colleges in the state. Of the 33,419 who graduated from public high schools in 1969, 69.2% planned to continue their education. Only 52.4% of the 13,886 attending four-year institutions, however, were enrolled in Connecticut institutions. And of those entering four-year programs, 40-50% will probably drop out before getting their degrees.

Figures from the United States Office of Education reported in the 1970 CHE publication, "Higher Education Annual Enrollment Survey," showed that the number of out-of-state students enrolling in Connecticut institutions does not by any means compensate for the out-migration of Connecticut students. Net out-migration of full-time undergraduate students numbered 16,214 in fall 1968.

Out-Migration to Type of Institution			In-Migration to Type of Institution		
Public	Private	Total	Public	Private	Total
5,359	29,934	35,293	3,127	15,952	19,079

B. TRANSPORTATION AND ACCESS TO HIGHER EDUCATION

With few exceptions, largely in the northeastern part of the state, all students live within an hour commuting distance by car of a two-year community or technical college. Major highways provide relatively easy access also to the state colleges and universities, although complaints about lack of parking space are common.

The Connecticut Department of Transportation has tentative plans -- depending upon the population growth, employment patterns and car registrations -- to enlarge existing expressways, build additional connector highways and to add new routes. The Department's plans take into consideration the increasing enrollments at the colleges and universities throughout the state, and the numbers of day students who come by car. For students who must depend upon public transportation, however, higher education is less accessible.

In a recent study[1], Willingham determined that 87% of Connecticut's population lives within commuting distance of a "free access" college. That percentage is a good deal higher than for any other state in the nation. (He defined free access colleges as those which admit at least one-third of its freshmen from the bottom half of their high school class third of its freshmen from the bottom half of their high school class and which charge no more than $400 in annual tuition and fees. Thus his criteria are selectivity and level of tuition.) Further, his analyses show that 90% of the state's Black population lives within commuting distance of a free access college, as he defines it. However, free access higher education in Connecticut is afforded almost exclusively by the public community colleges.

C. PERSONAL INCOME

In 1968 personal income in Connecticut totalled nearly $13 billion, or $4,256 per capita compared to $3,417 per capita for the whole United States. In per household effective buying income, Connecticut ranked third among all the states in 1968, with $11,753 per household. Fairfield County, many of whose residents commute to New York City, is the most affluent. There is a wide range in family income, however. In each of the state's largest cities from 20 to 25% of the families have incomes of $3,000 a year or less.

The Connecticut Bank and Trust Company in its publication, Connecticut 2000, estimates that from 1966 to 1980 total personal income in the state, in constant dollars will almost double, taking per capita income up about 50%.

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[1] Free-Access Higher Education, Warren W. Willingham, College Entrance Examination Board, New York, 1970.

In per capita expenditures for state institutions of higher education, however, Connecticut ranked 43d among the 50 states in 1969, only a slight improvement from 47th place in 1965. The per capita amount for general expenditures was $38.30 in 1969. Median expenditure for the country was $55.61.

D. THE ECONOMY

Manufacturing -- nationally and in Connecticut -- is the chief single source of income. The service industries, however, are showing a much faster growth rate and by 1980, according to information compiled by the Connecticut Bank and Trust Company, the service industries will probably provide about 64% of the jobs in Connecticut, compared with 59% in 1968. Manufacturing will supply about 35% and resource industries will offer progressively fewer jobs than their one percent in 1968.

A projection of employment by sector from the state's "Occupational Outlook, 1968-75" is given below:

TABLE 5

Industries In Which People Work	1968 (thousands)	1975 (thousands)
Manufacturing	477.6	459.0
Trade	211.0	251.0
Service	158.3	208.0
Government	136.1	158.9
Finance, Insurance, Real Estate	66.8	75.9
Construction	51.4	58.8
Transportation & Public Utilities	50.3	49.6
Agriculture	14.4	12.0
All other (household workers, self-employed, unpaid family workers)	100.1	108.0
Total Employment	1,266.0	1,381.2

1. Defense Expenditures[2]

Two states, Massachusetts and Connecticut, account for approximately 90% of New England's military prime contracts, and probably an even larger share of the subcontracts, although this cannot be precisely determined. In 1965 total prime contract awards in Connecticut were $1.3 billion. By 1966, however, largely as a consequence of the Vietnam military buildup, Connecticut's awards almost doubled. The increase in Connecticut was attributable largely to the $700 million of additional aircraft contracts the state's industries received.

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[2] Fostering Industrial Growth in Massachusetts; Vol. I: Cutbacks in Defense Spending and The Economy of Massachusetts, 1968-1972; a report to Governor Sargent and Commissioner Sheehan, October, 1970

Of all the New England states, Connecticut has been the largest defense-space producer (See Table 6), at least in terms of identifiable major prime contractors, and certainly in terms of contract dollars per capita. This is due to the presence of United Aircraft, Avco, and General Dynamics. They account for approximately 90% of Connecticut's defense sales. Thus, anything that happens to these companies significantly affects Connecticut's military sales.

In 1969 defense contracts fell off more than one-third from the previous year; and they were 50% lower in the first half of 1970 than in the same period of 1969, according to the October, 1970, issue of "Connecticut Business Trends" by the Connecticut Bank and Trust Company.

TABLE 6
MILITARY PRIME CONTRACT AWARDS
(for selected states)
Related to Population, 1968

	Percent of Total Military Prime Contracts	Percent of Population	Dollars of Military Prime Contracts Per Capita
Connecticut	6.3	1.5	$794.8
Texas	11.0	5.5	372.3
California	17.4	9.7	335.3
Massachusetts	4.3	2.7	296.0
Missouri	3.6	2.3	293.3
New York	9.4	9.0	192.7
Ohio	4.4	5.3	154.9
Pennsylvania	4.6	5.9	147.3

2. Projected Growth Rates of Connecticut's Economic Sectors

The Connecticut Bank and Trust Company in its publication, Connecticut 2000, has estimated the annualized growth rates of the state's various economic sectors over the period 1966 to 1980. Those estimates are tabularized and presented as Table 26 on page A-11 of Appendix A.

3. Boom in Services

According to the Connecticut Labor Department's "Occupational Outlook, 1968-1975", the state will have about 400,000 job openings through 1975. Nearly 30% of them will be new positions.

Industry employment projections were predicated on moderate economic conditions and an end to the Vietnam war. The adjustment has already begun in the defense-oriented industries. Most of the reductions will be in manufacturing, with a substantial amount in the unskilled and semi-skilled classes although manufacturing will remain the largest single source of employment.

A net growth of more than 130,000 jobs in non-manufacturing is expected. This will include net gains of 40,000 in retail and wholesale trade, 22,800 in government and 49,700 in other services. Agriculture is the only field for which a net reduction is projected.

Some shifts in the occupational make-up of the labor force will take place also. Professional and technical employment, the fastest growing occupational group, will swell by over 36,000 workers, with total job opportunities amounting to 80,400. This number is 20% of the total job openings.

The largest number of job openings, 107,000, will be in clerical occupations, with almost 31,000 new jobs added between 1968 and 1975. Service workers will show the strongest relative employment growth through 1975. By then it is estimated that more than half of all professional and technical employment will be in the service industries, concentrated in education and health.

By 1975 there will be a need for 8,500 additional technicians in the state.[3] Of these 3,550 will be required for expansion, 347 to fill 1967 vacancies, and 4,610 for replacements of those who retire or change occupations. The largest need will be for electronic technicians (2,750), mechanical-tool technicians (1,830), aeronautical and aerospace technicians (808), and chemical technicians (680). The expected number of 3,600 technical college graduates over the next five years will fall far short of meeting the technician need by 1975. Women technicians number 710, or 4.4% of the 16,200 technicians employed in 1967. While production activity is now in a decline which is expected to continue through 1971, the upturn which will follow will result in significant shortages of professional and technical personnel by 1975.

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[3] The Need for Technicians in Connecticut, a study for the State Technical Colleges by the Labor Education Center of The University of Connecticut, 1970.

Many of the professional and technical jobs require college and graduate degrees. A number, which directly affect the health, education, and welfare of the public, require the demonstration of proficiency and competency to a state licensing board.

Critical service occupations in which personnel needs are mushrooming are health care and municipal services. Specialized needs exist in education.

4. Health Care

There will be a continuing shortage, from doctors to janitors, and including all sorts of technologists and therapists with specialized skills. A 1967 study [4] determined that the state will have need for 59,200 additional trained persons in health services by 1976. This figure includes nurses but does not include doctors, dentists, and others requiring education beyond the baccalaureate degree. By occupation the largest need is for registered nurses, 20,940 additional by 1976. In the technician field the largest needs will be for medical laboratory technicians (1,234), X-ray technicians (653), and operating room technicians (404). Dentists indicate a nine-year need of 1,339 dental hygienists, 1,447 dental assistants, and 993 secretary-dental assistants. Health services, the most rapid employment growth field in the state, employed 52,530 persons in June, 1966, a gain of 19,060 (57%) in ten years. To deliver adequate health care over the next decade will require health service personnel well beyond the number that can be trained with existing facilities and programs.

The Connecticut Labor Department forecasts (Occupational Outlook: 1968-1975) the need for an additional 740 dentists and 2,580 physicians and surgeons between 1968 and 1975.

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[4] Health Service Occupations, a study for the Divison of Vocational Education of the Connecticut Board of Education by the Labor Education Center of The University of Connecticut, September, 1967.

A recent study[5] of manpower needs in environmental health occupations indicated employment as of October, 1968, of 817 persons. The study forecasted a rise in such employment by an additional 485 positions to 1,302 (a 59% increase) by 1973. A further rise of 265 positions to a total of 1,567 by 1978 was forecast, a 92% increase for the ten-year period.

The 1970 Directory of Education and Training Programs for Connecticut Health Occupations lists more than forty job titles. However, new jobs as yet undefined will develop as new modes for delivering health care develop.

As the authors of the Directory point out, the need is not simply to duplicate existing curricula but rather to establish totally new academic programs or to restructure completely some existing programs.

For example, we aren't training enough paraprofessionals to assist doctors and dentists, although we know that quality health care can be extended to greater numbers when doctors delegate routine activities to aides and technicians and spend their own time on more skilled tasks. And surely further research will disclose other new patterns and efficiencies that will in turn require different training than is now given.

As evidence of the overall need, a 1970 report on medical care issued by the Carnegie Commission on Higher Education calls for 126 new health education centers in the United States, one or more to be located in Connecticut. The centers would relate medical training more effectively to the delivery of health care. The proposed reforms would cost the Federal Government a total of $1 billion by 1980.

5. Teacher Training

The children born during the baby boom following World War II are grown up now. The need for teachers, which moved from the primary grades to the secondary and college levels, is now limited to specialized areas.

In addition to replacement needs, there are urgent unfilled needs for bilingual teachers and special education teachers, for teachers capable of establishing rapport with minority and disadvantaged youngsters, for teachers of industrial arts, vocational education, and interdisciplinary subjects, such as environmental education, and for vocational counselors.

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[5] Survey of Needs in Environmental Health Occupations, a study for the Connecticut Education Department by the Connecticut Labor Department, March, 1969.

The Federal Environmental Quality Education Act of 1970 aims to strengthen the resources for environmental education by making grants to institutions of higher education for developing, testing and evaluating new curricula and for training teachers in their use.

6. Government

Over the long term, need for employees is exceeding the supply of appropriately trained personnel in all types of municipal service, including city and town management, planning, zoning, housing, urban renewal, traffic management, law enforcement, health, recreation, environment and social welfare. Employment by state and local government in such occupational sectors, including education, is expected to increase more than two and one-half times by the year 2000, according to the Connecticut Interregional Planning Program.

7. Employment Changes Projected to Result from Connecticut's Forecasted Economic Development

Table 27 beginning on page A-12 of Appendix A summarizes projected employment changes from 1968 to 1975 in Connecticut by major occupational groups and selected occupations most of which require or would benefit from post-secondary education. The information is taken from the Connecticut Labor Department's report, Occupational Outlook: 1968 to 1975.

E. HIGHER EDUCATION ENROLLMENT

A number of trends in higher education are easy to discern.

- An estimated 8.2 million students enrolled at the nation's colleges and universities in the fall of 1970, nearly three times the enrollment in 1955.
- Connecticut's share -- exclusive of the Coast Guard Academy which is federally supported -- is 126,680, an 8% increase over the preceding year 1969.
- Nationally, slightly more than half of those who complete high school enter college.
- In Connecticut, in 1969, 69.2% of the graduates of public high schools went on to some form of higher education. While the percentage for private schools is not available for 1969, it is undoubtedly higher than for public. In 1968, for example, 91% of the graduates of private high schools went on to some form of higher education: 70% to a four-year college, 12%

to a two-year college and 9% to some other type of institution. Earlier projections had indicated that 70% of the graduates of public high schools would be seeking post-high school education by 1975, but actual registration is rising faster than anticipated. About half of those who enter institutions of higher education will probably stay to complete the program undertaken.

In 1970 about 58% of the students attending Connecticut colleges are enrolled in publicly-supported institutions, compared to 56% in 1969. The main rise -- nearly 4000 students or over 20% in one year -- was in the two-year public institutions, including both the community and technical colleges. The only drop in enrollment occurred in the two-year private institutions. The increase, however, in the four-year private institutions was slightly more than a thousand, or only 2.5%.

The following Table shows the increase of 1970 enrollments over 1969 for both full- and part-time students in all programs in both the public and private institutions in Connecticut.

TABLE 7

OPENING FALL ENROLLMENTS

A Head Count of All Students Enrolled in Connecticut Colleges

	1969	1970*	Gain	Gain %	Projected 1980	Projected Gain %
Four-year public	46,872	51,588	4,716	10.0	74,700	44.8
Four-year private	48,721	49,948	1,227	2.5	55,000	10.1
Sub-total	(95,593)	(101,536)	(5,943)		(129,700)	
Two-year public	18,263	22,193	3,930	21.5	46,100	107.7
Two-year private	2,628	2,537	-91	-3.5	3,200	26.1
Sub-total	(20,891)	(24,730)	(3,839)		(49,300)	
Federal -- Coast Guard Academy	925	969	44	4.8	1,000	3.2
Total	117,409	127,235	9,826		180,000	

* As first reported to CHE on September 30, 1970

Among the 180,000 students in 1980, there will be 101,000 full-time equivalent students supported by appropriations from the State General Fund.

1. Rising Enrollments to Continue

There will be no letup in the number of youths seeking post-secondary education during the next decade. The only question is: How many of the students presently attending Connecticut's elementary and secondary schools will choose to continue their education and what type education will they want? In view of the rising aspirations of large segments of the population, accurate projections are difficult.

The Arthur D. Little, Inc., Suggested Plan for Developing Connecticut's Community College System, April, 1970, estimated that by 1985 a potential 62,000 to 72,000 students will be seeking entrance for full-time and part-time study at Connecticut's regional community and technical colleges, assuming a truly comprehensive array of program offerings and facilities adequate to support such programs and numbers of students. Present facilities cannot accommodate any where near that number.

2. Admissions Requirements

The University of Connecticut generally draws its student body from high school graduates who have been in the top half of their class. The State Colleges draw from a somewhat wider base, considering each applicant on an individual basis but accepting primarily students who are academically in the upper 50 to 60% of their high school graduating classes.

Anyone with a high school diploma or its equivalent can enroll for a degree program at one of the ten Regional Community Colleges, if space is available. Acceptance for the most part is on a "first come, first served" basis.

Entrance to a particular program, such as allied health studies, is more selective. Students are screened to determine their general aptitude and their previous preparation, with screening procedures fairly standard at each of the community colleges. If not admitted to the program of his choice, however, a student may take other courses.

Persons without a high school diploma may take courses, but to enroll for credit toward a certificate or an Associate degree, students must have a high school diploma or its equivalent.

Technical College students must be high school graduates with an aptitude for mathematics and science, and an interest in becoming technicians in industry and engineering. Those who do not qualify on the aptitude test may be admitted to a one-year pre-technical program to prepare them for full enrollment. About 40-50% of entering students complete the two-year program, and about 40% of the graduates continue on to a four-year college for a B.S. degree, receiving up to two years of transfer credit.

About 20% of the third-year transfer students at The University of Connecticut come from the state's two-year colleges, compared with only 5% three years ago. They are given first preference among all transfer applicants; a total of 130 were offered admission in 1970.

At the State Colleges, spaces are also available in the third-year level for students who have successfully completed two years at a community college.

3. Open Enrollment for Connecticut?

"The Connecticut Extended Educational Opportunity Program Committee", a subcommittee of CHE, points out that Connecticut has no statewide policy on enrollment. Each institution establishes its own admissions policy. However 23 out of 33 institutions responding to a survey indicate that they have special admission standards for disadvantaged students and others.

On the basis of its investigations, the Extended Educational Opportunity Program Committee made two basic recommendations which Task Force I and the ADL study team endorse:

- That existing extended educational opportunities programs at the separate, individual institutions be encouraged and supported financially;
- That CHE coordinate these separate programs, define the most appropriate roles for institutions, and establish a statewide plan with the public two-year institutions as the key institutions.

Task Force I understands this to mean that admission to higher education for those who do not meet conventional admissions standards will be facilitated by compensatory and remedial programs, concurrent with their enrollment at a college, and leading to qualification for admission to a degree program.

The four-year institutions have initiated such programs. Task Force I believes that they should be continued; it also concludes that the major portion of compensatory and remedial work should be a responsibility of the community colleges. The ADL team supports this position.

To the extent that "open enrollment" means an opportunity for those who don't have conventional qualifications to benefit from developmental or remedial programs and gain access to a collegiate program, Task Force I and ADL endorse it. We both object, however, to "open enrollment" when it signifies automatic entrance to a degree-granting program for all who have attended high school, regardless of their scholastic readiness. However, we also assume a need for constant re-examination of admission standards by each institution.

Two-thirds of Connecticut's institutions of higher education are accepting students to whom they must give special developmental or remedial courses to qualify the students for regular programs. The technical colleges offer pre-entrance courses in mathematics and science, and do not admit students into the regular program until they qualify. The community colleges require placement examinations of all degree students. If a placement test indicates serious deficiencies, the student is required to take one or more non-credit remedial courses.

Task Force I suggests that to be more effective the educational system as it is now structured should provide some sort of transitional education between high school and college. Alternate learning centers in high school to help students who are having difficulties might be one answer.

It is to be hoped that the gap between the secondary and college levels will diminish as elementary and secondary schools meet the needs of all students better.

Another issue as difficult to resolve as open enrollment is how to make it possible for students to move in and out of programs easily and meaningfully. There must be greater flexibility for transfer from a two-year to a four-year program and from vocational to academic programs, to allow students -- or those who have been working for some time -- to change their career paths or to take some enrichment courses with a minimum loss of time and credits.

A positive step in this direction was taken in November, 1970, when the Task Force on Transfer of the CHE recommended that all Connecticut institutions granting the bachelor's degree agree to accept in transfer credit earned by examination and awarded to students in the two-year colleges in the state, provided:

- That such credit is awarded on the basis of duly recognized and nationally standardized examinations, and
- That such credit is supported by information as to local norms for such examinations.

CHAPTER IV

ORGANIZING THE STUDY TO DEAL WITH REGIONAL VARIATIONS IN CONNECTICUT'S SOCIOECONOMIC AND HIGHER EDUCATIONAL NEEDS

A. AGGREGATION OF PLANNING REGIONS INTO SIX GEOGRAPHICAL AREAS

For the study of differential regional needs the state's Planning Regions (as established by the Connecticut Development Commission) were aggregated into six broader geographical areas. Factors such as commuting patterns, service areas of the two-year colleges and university branches, labor and retail markets, and the present location of other institutions of higher learning were taken into account when delineating area boundaries.

Figure 1 on the next page portrays the boundaries of the six geographical study areas on a map of Connecticut. The figure also shows the locations of the institutions of higher education in each area. Public institutions are indicated by a capital letter on the map and independent institutions are represented by arabic numerals. The legend or code for identifying each institution of higher education is presented on the pages immediately following Figure 1.

The composition of each of the six areas by Planning Regions is indicated below:

Area A includes the Northwestern Connecticut, Litchfield Hills, Housatonic Valley, and the Central Naugatuck Valley Planning Regions:

Area B includes the Capitol, Central Connecticut, and Mid-State Planning Regions:

Area C includes the Windham and the Northeastern Connecticut Planning Regions;

Area D includes the Southeastern Connecticut Planning Region;

Area E includes the South Central Connecticut and the Connecticut River Estuary Planning Regions;

Area F includes the Southwestern Connecticut, Greater Bridgeport and Valley Planning Regions.

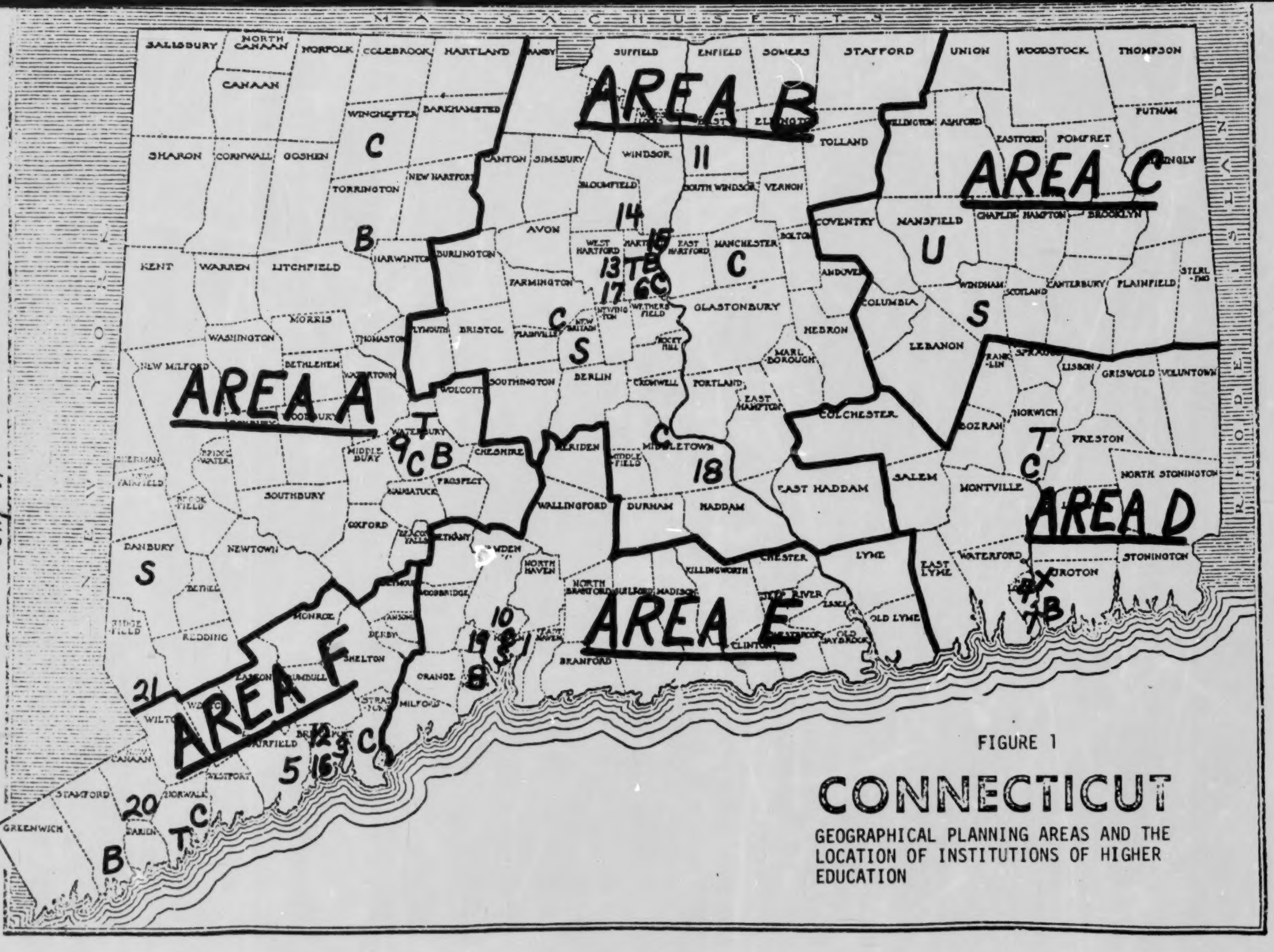

FIGURE 1

CONNECTICUT

GEOGRAPHICAL PLANNING AREAS AND THE LOCATION OF INSTITUTIONS OF HIGHER EDUCATION

LEGEND

Institutional Identification Code for Figure 1

Public Institutions

U = The University of Connecticut

B = Branches of The University of Connecticut

S = Connecticut State Colleges

C = Regional Community Colleges

T = State Technical Colleges

X = U. S. Coast Guard Academy

Independent Institutions

1 = Albertus Magnus College, New Haven

2 = Annhurst College, South Woodstock

3 = Bridgeport Engineering Institute, Bridgeport

4 = Connecticut College, New London

5 = Fairfield University, Fairfield

6 = Hartford College for Women, Hartford

7 = Mitchell College, New London

8 = New Haven College, West Haven

9 = Post Junior College, Waterbury

10 = Quinnipiac College, Hamden

11 = Rensselaer Polytechnic Institute of Connecticut, Inc., East Windsor Hill

LEGEND
Institutional Identification Code for Figure 1

Independent Institutions (Continued)

12 = Sacred Heart University, Bridgeport

13 = Saint Joseph College, West Hartford

14 = Saint Thomas Junior College, Bloomfield

15 = Trinity College, Hartford

16 = University of Bridgeport, Bridgeport

17 = University of Hartford, West Hartford

18 = Wesleyan University, Middletown

19 = Yale University, New Haven

20 = Silvermine College of Art, New Canaan

21 = New England Institute, Ridgefield

B. SUPPLEMENTARY ECONOMIC ANALYSES AND PROJECTIONS FROM A SLIGHTLY DIFFERENT CONFIGURATION OF PLANNING REGIONS AND LABOR MARKET AREAS

As Task Force I noted in its report, data for regional planning varies as to its recency, methods of development, geographical areas involved, and time spans of projection. While a number of the State's fifteen Planning Regions have made very useful and recent economic analyses and projections, others have not; some Planning Regions are not even organized and staffed. This makes regional comparisons very difficult.

Realizing the limitations of depending largely upon aggregations of economic data from individual Planning Regions for our area analyses and comparisons, we have supplemented such data with information developed in 1968 by ADL in a comprehensive study for the New England Regional Commission, The New England Economy Today and Tomorrow. That study designated subregional divisions of New England for purposes of comparative analysis. Connecticut was divided into five subregions. They correspond rather closely to the six areas we have chosen and described. Principal differences involve:

- Connecticut Subregion 01 of the New England study is made up of the two eastern areas of the state we have designated Area C and Area D; and
- Connecticut Subregion 03 in the southwestern part of the state includes not only Area F of this study but also the southwestern portion of Area A.

In spite of such lack of perfect congruence, we have included data derived from the 1968 ADL study because it provides a valuable supplement to data available in Connecticut and in useful comparative forms.

Figure 2 on the next page outlines on a map of Connecticut the boundaries of the five subregions used in the 1968 ADL study. Table 8 indicates the Labor Market Areas (LMAs) and the Planning Regions aggregated in each of the five Connecticut subregions. (Throughout this report we shall use the term "Area" followed by a capital letter to denote one of the six areas selected for this study, and the term "Subregion" followed by an arabic numeral to denote one of the comparative study areas used in the 1968 study.)

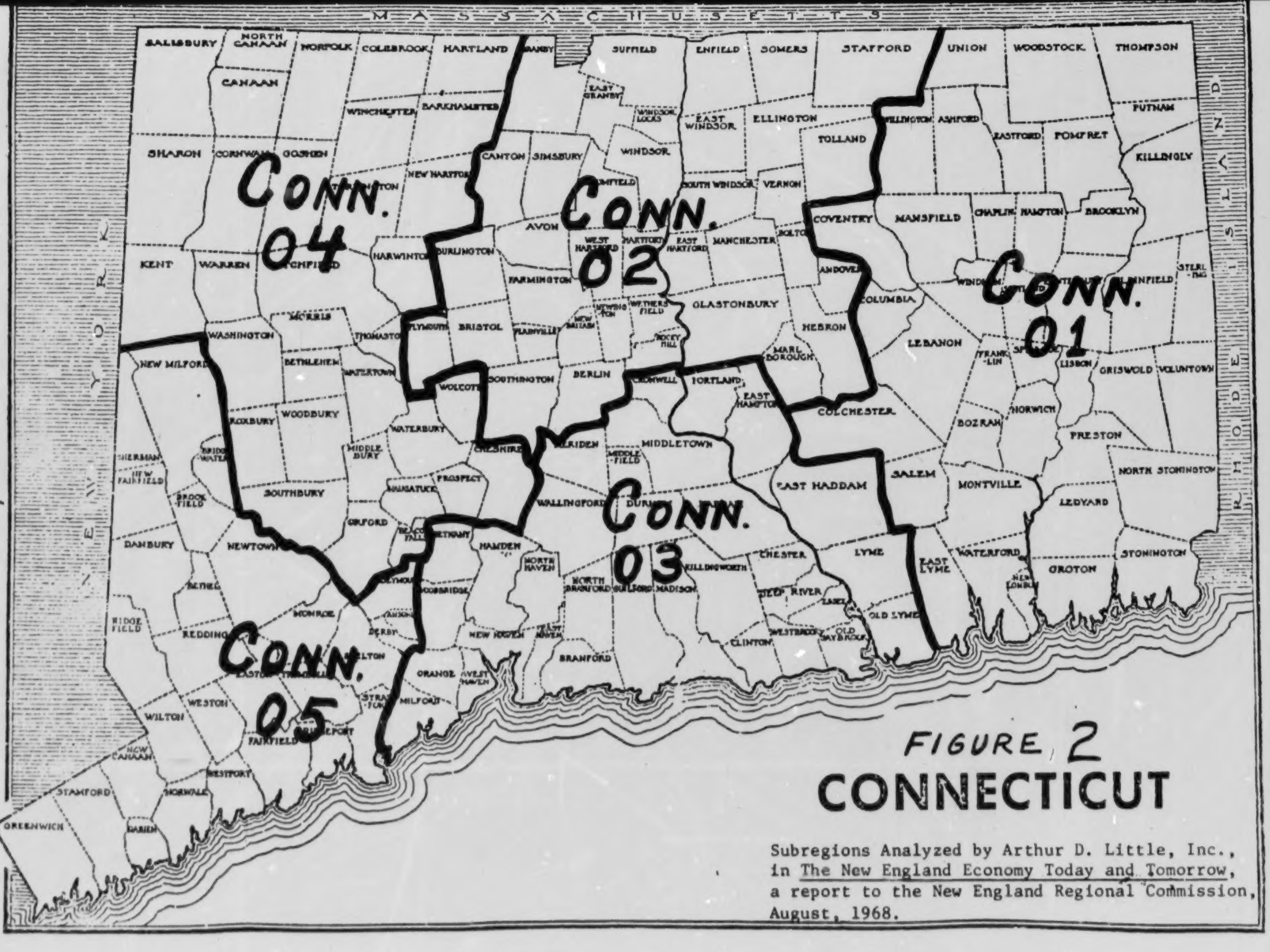

FIGURE 2

CONNECTICUT

Subregions Analyzed by Arthur D. Little, Inc., in The New England Economy Today and Tomorrow, a report to the New England Regional Commission, August, 1968.

TABLE 8

Subregion		Labor Market Areas/Planning Regions
Connecticut 01	LMAs	Willimantic, Danielson, Norwich, New London
	Pl. Regs.	NE Conn., Windham, SE Conn.
Connecticut 02	LMAs	Bristol, New Britain, Hartford
	Pl. Regs.	Capitol, Central Conn.
Connecticut 03	LMAs	Meriden, Middletown, New Haven
	Pl. Regs.	Mid-State, Conn. River Estuary & S. Central Conn.
Connecticut 04	LMAs	Waterbury, Torrington
	Pl. Regs.	NW Conn., Litchfield Hills, Central Naugatuck Valley
Connecticut 05	LMAs	Bridgeport, Norwalk, Stamford, Danbury, Ansonia
	Pl. Regs.	Housatonic Valley, Valley, Greater Bridgeport, Southwestern

Table 9 on the next page summarizes the ADL projections from 1965 to 1975 and 1985 of population, employment, and wages and salaries in each of the five Connecticut subregions.

TABLE 9

PROJECTIONS OF POPULATION, EMPLOYMENT, AND WAGES AND SALARIES BY CONNECTICUT SUBREGIONS

		1965	1975	1980
Population				
Subregion	01	308,230	361,700	408,700
	02	823,700	1,020,800	1,194,200
	03	596,100	675,600	745,500
	04	294,840	323,800	349,400
	05	784,620	934,300	1,066,100
State Total		2,807,490	3,316,200	3,763,900
Employment				
Subregion	01	92,483	106,776	117,643
	02	331,923	401,312	449,330
	03	216,937	239,490	258,643
	04	95,151	102,429	110,599
	05	295,343	335,695	374,820
Government		113,600	149,300	177,000
Extractive		13,900	11,500	11,200
Stat. Disc.		---	19,100	17,800
State Total		1,159,300	1,365,600	1,517,000
Wages & Salaries (000)				
	01	$ 533,650	$ 798,543	$ 990,319
	02	1,904,450	2,902,842	3,748,768
	03	1,206,500	1,746,892	2,236,745
	04	548,090	776,056	980,571
	05	1,676,440	2,428,553	3,383,005
State Total		$5,869,130	$7,876,830	$11,339,408

Source: The New England Economy Today and Tomorrow, a report to the New England Regional Commission by Arthur D. Little, Inc., August, 1968.

C. FEASIBILITY OF STUDIES TO DETERMINE REGIONAL SOCIOECONOMIC NEEDS AS BASES FOR ESTABLISHING NEEDS FOR HIGHER EDUCATION DEVELOPMENT

This is a complex issue; it has several interrelated aspects. First, there is the issue of the feasibility of differentially determining the economic and social problems and development needs among the several geographical subdivisions of a state. There is no doubt that this is possible; but the feasibility of such determinations hinges primarily on the adequacy of the available data base. For this study there were some problems with the adequacy of available data. The data concerning individual regions of the state were varied in recency of compilation and therefore in comparability. Data for analysis from the 1970 United States Census were not yet available. With but a few exceptions, forecasts or projections by all geographical subdivisions of the state were lacking; most projections were for the state as a whole.

Another data problem centered around the differnces in the boundaries of areas used in aggregating different kinds of data. Labor market areas, retail sales areas, commuting patterns, utility service areas, and the like, were rarely congruent, and only a few of the boundaries of such areas were coterminous with the boundaries of the state's Planning Regions. Consequently, most data from such differing frames of reference were difficult if not impossible to aggregate with precision.

Further, those geographical frames of references were only partially related -- and in varying degrees -- to the "service areas" of individual institutions of higher education, even for those commuting schools such as the public two-year community and technical colleges. Therefore, the programming and service implications for individual institutions are somewhat lacking in specificity (e.g., the number of students to graduate by program to meet the projected employment opportunities/manpower needs for a specific geographical area). However, even if it were possible to implement finely tuned plans for the production of trained manpower, the results of such precision in planning programs and accommodating enrollment would be at least partially vitiated by short-term and unforeseen variations in the local economy and its manpower demand. Therefore, we believe that because of the probable unforeseen variations in near-term demand and the ambiguities involved in program and enrollment planning, a precisely quantified set of manpower need forecasts by accurately defined geographical subdivisions of the state is not required. In other words, we belive analyses of the existing data base can be practically useful in institutional planning to meet major socioeconomic needs. Nevertheless, the use of a comprehensive, scientificaily developed, and appropriately analyzed (by geographical area) data base, such as that contained in the 1970 census, could significantly improve the quality of programming plans (and the credibility of those plans) developed individually or jointly by institutions of higher education.

A second issue concerns the adequacy of data on student interests and intentions, especially with repect to career and educational program considerations. Few data exist in this general area. Particularly useful information would be systematic (i.e., periodic, comprehensive and statewide) surveys of students' plans with respect to further education made in response to their understanding of emerging employment opportunities and available educational options. This would require three steps: (1) the development, periodic updating, and dissemination of a body of information concerning trends of employment opportunities in the state and available education offerings related to those opportunities; (2) the initiation of periodic, statewide surveys of a scientifically constructed sample of student intentions registered in response to the kind of educational and career guidance information described in (1); and (3) a vehicle for making such guidance information effectively available to students and potential students. High school guidance counselors would, of course, be one logical vehicle, but the establishment of Testing and Counseling Centers (as recommended in Chapter II and by CHE's Task Force I) would be highly desirable for reaching potential students out of high school. A mechanism and program for coordinating efforts and contributions of the several agencies critical to the development and use of such information would be most important.

This brings us to a third major issue: the impact on the planning of surrounding institutions generated by plans and programs of a single institution. This is at once a critical problem and a major opportunity for the institutions of higher education in Connecticut, both public and independent. As close as most institutions are to each other in this state the interaction effects are significant. No matter how valid and extensive the data base for planning, if the institutions operate independently in using that data base for planning programs and services, confusion and waste will result. This is why we recommend so strongly in Chapter II the establishment, through the initiative of the CHE, of additional Higher Education Centers. This would significantly facilitate joint planning among neighboring institutions, both public and independent, and assist in the improved articulation of programs and more flexible and informed student choice among available options and related programs.

A fourth issue deals with the issue of planning for what. By no means all of the programs and services offered by institutions of higher education are focused on the resolution or satisfaction of socioeconomic needs. And a number of institutions and programs are related to needs much more generally defined than those of a geographical subdivision of a state. Further, many institutions consider that their constituency and mission extends far beyond the boundaries of a state. Therefore, important as it is to some institutions, and for some programs, and to the unmet needs of specific geographical regions, the planning of programs and services to meet needs differentially defined by region is only a part of the planning process to be undertaken by most institutions.

In sum, however, we believe it is feasible and certainly useful to the socioeconomic development of a state and its component regions to determine what those developmental needs are, by region, and to mount cooperative institutional planning efforts to deliver programs and services attuned to those needs and related to student interests and aspirations.

The following six chapters discuss the socioeconomic picture and the higher education offerings and needs of each of the six defined geographical study areas.

CHAPTER V

STUDY OF AREA A -- (THE NORTHWESTERN CONNECTICUT, LITCHFIELD HILLS, HOUSATONIC VALLEY, AND THE CENTRAL NAUGATUCK VALLEY PLANNING REGIONS)

A. SOCIOECONOMIC FACTORS

1. Data from State and Planning Region Sources

The population (noninstitutional) of Area A increased 24.1% between 1959 and 1969, while its labor force increased 19.2%. Hence, this area has increasingly become one where people live rather than an area where they work (See Table 17 on page A-1). Both per capita retail sales and population density of Area A were below the average of the state as a whole in the mid to late 1960's.

In Area A, during the period from 1965 to 1969, nonmanufacturing employment as a percent of total nonagricultural employment in the state grew from 50.2% (72,890 jobs) to 52.5% (88,730 jobs). Within this major sector employment growth was concentrated primarily in the following categories (See Table 19 on page A-3). Trade -- 6,140 new jobs, mostly in retail, (a change from 16.6% to 17.9% of total nonagricultural employment in the state); Service -- 3,910 new jobs (from 11.7% to 12.4% of employment); and Government -- 3,170 new jobs (a change from 11.5% to 11.8% of total nonagricultural employment). Construction employment increased 1,580 jobs in the period, Communications and Utilities 580 jobs, and Finance, Insurance and Real Estate 400 jobs.

In the manufacturing sector of Area A, the employment categories showing significant net job growth in the four-year period were: Machinery and Electrical equipment -- 2,620 new jobs; Instruments, Needles, Watches and Clocks -- 2,520 new jobs; Fabricated metals -- 2,110 new jobs; and Other Manufacturing (See Table 19) -- (2,590) new jobs. Declines in proportion of employment were significant in Machinery and Electrical equipment, except in the specialized product area of bio-medical electronics; Chemicals, Rubber and Miscellaneous Plastics; Primary metals; Textiles and Apparel; and Food.

Although data for occupational groupings by Planning Region are old (the latest available figures are from 1960), comparison of Area A with statewide averages indicates some geographical differences which may be useful in educational planning. Employment in 1960 was more concentrated in the "craftsmen/foremen" category and in the "operatives" category in Area A than in the state as a whole (See Table 18 on page A-2). A lower proportion of the area's labor force was employed in "professional and technical," "managers, officials and proprietors," and "clerical" occupations than was true for the state as a whole.

Unemployment as of mid-September, 1970, in the labor market areas comprising Area A was as follows: Danbury -- 6.8% (1,700 men and 1,600 women) almost double that of the previous year: Torrington -- 8.8% (1,500 men and 1,700 women) largely including clerical workers, machine operators, and assemblers; and Waterbury -- 8.5% (3,800 men and 4,100 women), the highest percent since 1958.

2. Information from ADL's 1968 Study of the New England Economy

Connecticut Subregion 04 is forecast to share 1.9% (the median) of employment growth in New England from 1965 to 1980. Employment in this subregion is projected to grow 16.2% in that period. The boundaries of Connecticut 04 are shown on the map, Figure 2.

a. General Profile

Connecticut 04, located in the northwestern corner of the state, is comprised of the Planning Regions of Northwestern Connecticut, Litchfield Hills, and Central Naugatuck Valley, and includes the Labor Market areas of Waterbury and Torrington. Connecticut subregion 04 does not include the Housatonic Valley Planning Region, which makes it different in composition from Area A, which is composed of four planning regions including Housatonic Valley. With Waterbury the only major urban center and Torrington the only other large city, this area is nearly as sparcely populated as Connecticut 01.

Although Waterbury has direct major highway links with the other urban centers, both within and outside the state, Torrington has good access only to the south and no major highways cross the rest of this subregion.

A hilly, well-forested area, subregion 04 includes the southern tip of the Berkshires, numerous farms and parks.

b. Agricultural Activity

Agricultural production in Connecticut 04 accounted for just over $15 million in 1964, up slightly from the level in 1959. The number of farms and the acreage cropped declined moderately between 1959 and 1964. Agricultural production in this subregion is mostly dairy farming which has been increasing slowly.

c. Historical Analysis

Population. Connecticut 04 had 294,840 residents in 1965. This was about 2.7% of the New England total, lowest among the five subregions in Connecticut and thirteenth among the 29 subregions throughout New England. Between 1960 and 1965 the population of Connecticut 04 grew by about 9.0% or almost double the New England rate of growth. Since 1965 the population of Connecticut 04 has grown slowly.

Employment. Connecticut 04 provided 89,340 jobs in 1966, ranking twelfth among the subregions just ahead of Connecticut 02. Manufacturing activities were very noticeably dominant in this subregion, accounting for almost 58% of Connecticut 04's total employment in 1966. The services also accounted for relatively more employment in the subregion than in New England -- 14% versus 12%. The dominance of manufacturing was felt in the employment shares of all other employment divisions, particularly trade which accounted for only 17% of Connecticut 04's employment in 1966.

Between 1960 and 1966 total employment in Connecticut 04 rose by 11% compared to the 12% gain recorded for New England as a whole. Growth rates for the individual employment divisions in the subregion tended to be uniformly low, with a notable exception of construction employment which grew by more than 25% as compared to the New England rate of 15% in the six-year period. The mix of employment in the subregion has been changing very slowly in recent years, in favor of the non-manufacturing activities.

Manufacturing Employment. In 1966 primary metals, fabricated metals and transportation equipment accounted for 32.1% of manufacturing employment in Connecticut 04. Three other categories were very closely bunched -- machinery - except-electrical (14.6%); chemicals, rubber and miscellaneous plastics (14.2%); and instruments (12.8%). Each of the four accounted for smaller percentages of manufacturing employment in New England as a whole. In Connecticut 04 textiles, apparel and leather goods comprised only 3.9% of total employment compared to 18.8% throughout New England. The subregion accounted for 3.3% of New England's manufacturing employment with almost 12% of employment in instruments, almost 7% of employment in chemicals, rubber and miscellaneous plastics, more than 5% of employment in metals-transportation equipment and more than 4% of employment in machinery - except-electrical.

The subregion's four largest manufacturing industries each experienced employment gains between 1960 and 1966 but at net rates below the regionwide averages. Instruments employment in Connecticut 04 in that period actually declined by almost 2%. All of the subregion's net gain in total manufacturing employment between 1965 and 1966 occurred at somewhat below the overall New England percentage increase. On balance, the employment structure of Connecticut 04 within the manufacturing division did not change significantly between 1960 and 1966.

Wages and Salaries - Earnings. In 1966 wage payments in Connecticut 04 totalled $596.9 million. This was about 3% of the total New England wage bill. Per capita earnings in the subregion averaged $6,681 or almost 15% above the New England average. Construction, the utilities group, manufacturing, and finance, insurance and real estate, in that order had per capita earnings above the subregional average. Moreover, all per capita earnings figures in Connecticut 04 were at least 10% above the equivalent figures for New England. Between 1960 and 1966 earnings in construction and manufacturing grew more rapidly in the subregion than in New England, but in all other major employment division the New England percentage increases in earnings were slightly higher.

d. Projective Analysis

Population. ADL projects the population of Connecticut 04 to increase from 294,840 to 349,400 in the 1965-80 study period. The projected percentage gain will be about 19% as compared to 26% for New England. The projected absolute gain of 54,600 represents 1.9% of that for New England, a percentage that is equivalent to the subregion's share of the overall region's projected employment increase in the same period.

Employment. Our projections indicate a growth in total employment of about 16% for Connecticut 04 between 1965 and 1980, a rate well below that projected for New England. Subregional employment in finance, insurance and real estate is expected to grow at slightly above the corresponding regional rate. Employment in the utilities group in Connecticut 04 is expected to decline more quickly than in New England. In all other major employment divisions the subregion is not expected to match regional growth performance during the projection period. In 1980 it is expected that manufacturing employment in the subregion will be less dominant than it was in 1965 (although still high relative to the New England employment structure). Except for the utilities group all other major employment divisions in the subregion are expected to increase their shares of total local employment -- particularly services and finance, insurance and real estate.

Manufacturing Employment. Our projections indicate that employment in the largest manufacturing sector in this subregion -- metals-transportation equipment -- is expected to grow at a rate only about one-third the corresponding New England rate in the projection period. In fact, on an industy-by-industry basis, subregional manufacturing growth performance will not tend to match that of New England as a whole; however, above average employment growth expected for the lumber group and electrical machinery help to keep projected total manufacturing employment growth for Connecticut 04 in line with projected New England growth. By 1980 it is expected that metals-transportation equipment will be slightly less dominant in the manufacturing employment structure of the subregion although still relatively more important locally than in New England as a whole;

a good overall mix of subregional manufacturing employment is expected to be preserved, with five of the eleven sectors we have defined each accounting for at least 10% of total subregional manufacturing employment.

Wages and Salaries. We have projected total wages and salaries in Connecticut 04 to rise from $548.1 million to $980.6 million between 1965 and 1980 (in constant 1965 dollars). This reflects the previously mentioned projected gain in employment, together with a projected increase of 32.7% in average productivity per worker. The subregion's wage and salary total is expected to grow relatively less than the New England total in the projection period -- 70% versus 85% -- reflecting slower subregional employment growth, which outweighs faster subregional growth in average productivity.

B. HIGHER EDUCATION AVAILABLE IN AREA A

The institutions of higher education listed below are located in Area A as shown on Figure 1. Program offerings of each institution are indicated on Figure 3.

Public Institutions

Northwestern Community College (Winsted)
Mattatuck Community College (Waterbury)
Waterbury State Technical College
Western Connecticut State College (Danbury)
Torrington Branch of The University of Connecticut
Waterbury Branch of The University of Connecticut

Independent Institution

Post Junior College (Waterbury) (9)

The two (public) Regional Community Colleges both offer two-year transfer programs in the Arts and Sciences plus non-transfer programs in General Studies. Further, they both offer Associate degree and Certificate programs in the following general curriculum areas: business and secretarial studies and public and social service. In health occupations Mattatuck offers a program for mental health workers. Northwestern planned to offer a child care program in the fall of 1971. Post Junior College offers several two-year programs in the general curriculum areas of arts and science, business and secretarial studies, and education.

Waterbury State Technical College awards the degree of Associate in Applied Science in chemical engineering technology, data processing technology, electrical engineering technology, mechanical engineering technology and a physical metallurgy option, manufacturing engineering technology, fire technology and administration, and industrial management technology. In addition, it offers a one-year pre-technical program and a one-year certificate industrial-technical program. Further, it operates continuing education Extension Centers in Hamden and Torrington.

Western Connecticut State College offers nine undergraduate degree programs in its day college. The Bachelor of Science degree is awarded upon completion of the four-year programs of elementary education, music education, secondary education, health education (new), library teacher, medical technology, and nursing. The Bachelor of Arts degree is given in liberal arts. The Associate in Science degree is awarded for completion of a two-year general liberal arts program. Completion of the four-year business administration program merits the Bachelor of Business Administration degree. The Bachelor of Music degree (new) is also awarded upon completion of the four-year music program. In addition, the Evening College and the extension program offer special courses, workshops, makeup courses, cultural and recreational courses, and so on, in response to community interests. Graduate programs include a Master of Science in general and professional education, a Master of Science in guidance counseling (new), a Master of Science in psychological examiner (new), a Master of Arts in English and in mathematics (new), a Sixth-year program leading to certification in Connecticut as a reading consultant, and a Sixth-year program in elementary education (new).

Up to two years of undergraduate study may be taken at University branches. At the Torrington and Waterbury Branches of The University of Connecticut the following undergraduate offerings may be taken and transferred to Bachelor's degree programs:

Arts and Sciences - 4 semesters

Agricultures - 3 semesters

Business Administration - 4 semesters

Education - 4 semesters in major teaching field

Engineering - 4 semesters

Fine Arts - 1 semester

Home Economics - 3 semesters

Nursing - 2 semesters

Pharmacy - 4 semesters

Guidance Counseling

Physical Education - 1 semester

Physical Therapy - 3 semesters

FIGURE 3

	AGRICULTURE	FORESTRY	ARCHITECTURE	ARTS AND SCIENCES	ENGLISH,WRITING,JOURNALISM	FOREIGN LANGUAGES	FINE ARTS	GRAPHIC ARTS	AMERICAN STUDIES	INTERNATIONAL STUDIES	RELIGION OR THEOLOGY	BUSINESS ADMINISTRATION	BUSINESS, SECRETARIAL AND DATA PROCESSING	LAW	EDUCATION	PHYSICAL EDUCATION	GENERAL EDUCATION	GUIDANCE AND COUNSELING	PSYCHOLOGICAL EXAMINER	LIBRARY SCIENCE	READING CONSULTANT	HOME ECONOMICS	DENTISTRY	PRE-DENTAL	DENTAL OFFICE ASSISTANT
STATE COLLEGE WESTERN CONNECTICUT STATE COLLEGE				A B M	B	B	B					B			SY B M		A	M	M	B	SY				
INDEPENDENT INSTITUTION POST JUNIOR COLLEGE				A TP								A TP	A		TP		A								
THE UNIVERSITY OF CONNECTICUT TORRINGTON BRANCH	TP 3S			TP 4S			TP 1S					TP 4S			TP 4S	TP 1S									
WATERBURY BRANCH	3S			4S			1S					4S			4S	1S									
TECHNICAL COLLEGE WATERBURY STATE TECHNICAL COLLEGE																									
COMMUNITY COLLEGES NORTHWESTERN CONNECTICUT COMMUNITY COLLEGE				A TP								A	A				A			A					
MATTATUCK COMMUNITY COLLECE				A TP			A					A	A				A								

KEY:

A – Associate/Certificate	D – Doctorate	S – Semesters
B – Baccalaureate	SY – Sixth-Year	X – One-Year Program
M – Master's	TP – Transfer Program	

RE 3 AREA A

PRE-DENTAL	DENTAL OFFICE ASSISTANT	PHARMACY	NURSING	PHYSICAL THERAPY	OCCUPATIONAL THERAPY	MEDICINE	PRE MEDICAL	MEDICAL TECHNOLOGY	MEDICAL AND BIOLOGICAL LABORATORY TECHNICIANS	INHALATION THERAPIST	CYTOTECHNOLOGY	RADIOLOGICAL TECHNOLOGY	SURGICAL TECHNICIAN	CARDIOLOGICAL SCIENCES	BIOLOGICAL SCIENCES	NATURAL SCIENCES (PHYSICAL, LIFE, MATHEMATICAL)	SOCIAL SCIENCES	POLITICAL SCIENCE	PUBLIC AND SOCIAL SERVICE (Urban Studies, Law Enforcement)	FIRE TECHNOLOGY AND ADMINISTRATION	CHILD CARE	MENTAL HEALTH WORKER	ENGINEERING	CHEMICAL ENGINEERING TECHNOLOGY	CIVIL ENGINEERING TECHNOLOGY	DATA PROCESSING TECHNOLOGY	ELECTRICAL ENGINEERING TECHNOLOGY	MANUFACTURING ENGINEERING TECHNOLOGY	MECHANICAL ENGINEERING TECHNOLOGY	METALLURGICAL TECHNOLOGY	NUCLEAR ENGINEERING TECHNOLOGY	PHYSICAL SCIENCE TECHNOLOGY	INDUSTRIAL MANAGEMENT AND TECHNOLOGY	ENGINEERING AIDES	INDUSTRIAL–TECHNICAL	PRE-TECHNICAL
			B					B							B	B	B																			
		TP 4S	TP 3S	TP 3S																			TP 4S													
		4S	3S	3S																			4S													
																				A				A		A	A	A	A	A			A		X	X
																			A																	
																			A			A														

In addition to these offerings the Division of University Extension organizes, usually upon evidence of sufficient demand, certificate courses and programs to promote the vocational and educational competence of persons employed in business, industry or the professions. Advanced and graduate courses are also given at the Branches and other community centers enabling teachers, engineers and other employed persons to earn credit toward advanced degrees while holding full-time positions.

C. UNMET NEEDS IN AREA A

Interviewees in the Central Naugatuck Valley Planning Commission indicated that Uniroyal is building an R&D plant in the region which will be hiring about 500 technical people along with the appropriate backup of secretarial and clerical staff. They also indicated needs for psychiatrists, other doctors, sewer treatment operators, air pollution monitoring experts, and people trained to operate day care centers. The Chamber of Commerce has voiced the need for additional doctors, dentists, and nurses in the region.

A 1967 study[6] found that 5,777 persons were employed in health service occupations in Area A. In the year 1967 there were 432 vacant positions in the area. The study forecast the need in the area for 4,550 additional health service personnel in the period 1967 to 1971. An additional 8,008 health service personnel were forecast to be needed in Area A in the nine-year period from 1967 to 1976. Occupational categories projected to have need for the greatest number of trained health service personnel in the period from 1967 to 1976 were the following: nurses (3,454); nurses' aides (1,229); other aides (1,009 including 512 psychiatric aides in the Danbury labor market area and 322 mental retardation aides in the Waterbury labor market area); medical and dental secretaries and receptionists (628); dental assistants and hygienists (375); and technicians of all types (305).

A 1970 study[7] of the need for technicians pointed out that the area served by the Waterbury State Technical College employed as of June, 1970, 1,258 technicians. At the time twenty-one vacancies existed in technician jobs in that area. Total need for additional technicians in the area by June, 1975, (including current vacancies, withdrawals, and job expansions) was forecast as 679. The greatest needs over the five-year period in the area for additional technicians by occupational category were for mechanical-tool technicians (261) and electronic technicians (230). The planned output of the technical college in the area is not likely to meet the forecast demand.

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[6] Health Service Occupations: Occupational Needs - Educational Requirements, a study for the Division of Vocational Education, State Department of Education, by the Labor Education Center, The University of Connecticut, September, 1967.

[7] The Need for Technicians in Connecticut, a study for the State Technical Colleges by the Labor Education Center of The University of Connecticut, 1970.

In examining the future plans of the regional community colleges in the area, their expansion programs by and large seem to be in line with the area's needs. Northwestern Community College is planning to add a child care program to its curriculum. Mattatuck Community College is planning to add programs in radiologic technology, nursing education, child care aide, data processing, inhalation therapy, library aide and assistant, dental assistant, engineering (physical science) aide, and environmental technician between now and 1975. Even with these additions, however, the growing need for additional personnel trained in the health sciences and services will significantly outstrip the planned supply.

CHAPTER VI

STUDY OF AREA B -- (THE CAPITOL, MID-STATE, AND CENTRAL PLANNING REGIONS)

A. SOCIOECONOMIC FACTORS

1. Data from State and Planning Region Sources

The noninstitutional population of this area has grown 22% from June, 1959, to June, 1969, while its labor force has grown 23.5% over the same period (see Table 19 on page A-1). Population density is above average in this area, while per capita retail sales are below average in the Central and Mid-State Planning Regions and considerably above average in the Capitol Region.

Over 60% of employment in this area has been in the nonmanufacturing sector (see Table 10 on page A-4). Within this major sector in the period from December, 1965, to December, 1969, employment increased most in the following employment categories: Trade -- 10,660 jobs; Service -- 10,320 jobs; Government -- 7,750 jobs; Finance, Insurance and Real Estate -- 5,680 jobs; and Construction -- 2,490 jobs. In manufacturing the greatest growth was in Primary and Fabricated Metals and Aircraft (3,780 jobs) and Transportation Equipment (4,550 jobs).

In 1960 Area B had a larger concentration of employment in the clerical and sales occupations than the state as a whole (see Table 18 on page A-2). It also had a lower percentage of its labor force in the operatives occupational group.

As of mid-September 1970, unemployment in the labor market areas of Area B was as follows: Bristol -- 14.0% (1,700 men and 1,900 women); Hartford -- 4.4% (9,700 men and 6,200 women) largely potential clerical and sales trainees and most types of engineers and mechanical draftsmen; Middletown -- 5.9% (1,640 men and 1,360 women); New Britain -- 7.7% (2,000 men and 2,000 women).

2. Information from ADL's 1968 Study of the New England Economy

Connecticut Subregion 02 (see map, Figure 2, on page 47) is somewhat smaller than the area contained in Area B described above, since Connecticut 02 does not contain the Mid-State Planning Region. Connecticut 02 is forecast to share 12.9% of the employment growth in New England from 1965 to 1980. Employment in this subregion is projected to grow 35.4% in that period.

a. General Profile

Located in the north central part of the state, Connecticut 02 includes the Capitol and the Central Connecticut Planning Regions, and the Labor Market Areas of Hartford, Bristol and New Britain. Encompassing the urban centers of Hartford, Connecticut's largest city, and New Britain, this subregion is heavily industrialized and has the highest percentage of the State's employment and population. Crisscrossed by I91 and I84, Connecticut 02 has excellent access to Springfield and Worcester, Massachusetts, to the north, as well as the southern urban centers of Connecticut and New York City. The Hartford area is a major center of the insurance industry in New England and accounts for the largest percent of employment in this industry in New England outside of Boston. The subregion is also a major center of aircraft production. The northern part of Connecticut 02 has a heavy concentration of agricultural land.

b. Agricultural Activity

This subregion's agricultural production of just over $46 million in 1964 made it the third largest in New England. Agricultural output increased by about one-third between 1959 and 1964. Both the number of farms and the acreage cropped declined substantially between 1959 and 1964. There has been considerable pressure on agricultural land from other uses in this subregion as population and employment have expanded. The main agricultural product of this subregion is tobacco, of which it produced just over 8 million pounds in 1964. There is some dairy activity but it is declining.

c. Historical Analysis

Population. Connecticut 02 had 823,700 residents in 1965. This was 7.4% of the New England total, the third highest among the subregions in New England and highest among the five subregions in Connecticut. Between 1960 and 1965 the population of Connecticut 02 grew by 11.2% or about double the New England rate of growth. Employment growth in the subregion was only slightly higher--at 11.8%--in the same five-year period. Since 1965 the population of Connecticut 02 has continued to grow; by 1967 the net increase was 15.3% over the 1960 level.

Employment by Major Division. Connecticut 02 provided 322,140 jobs in 1966, second only to the Boston Metropolitan subregion as the heaviest employer in New England. The subregion accounted for 10% of New England's total employment.

Finance, insurance and real estate accounted for more than 11% of employment in Connecticut 02 in 1966, a proportion almost double that recorded in New England as a whole, reflecting the heavy concentration of insurance activities in and near Hartford. This diversion from New England's overall employment pattern is not reflected in either the manufacturing or service components of the subregion's employment structure: manufacturing accounted for 46% of subregional employment compared to 47% of New England employment, while services accounted for 14% of subregional employment and 12% of New England employment. Rather, the diversion is reflected in the utilities and trade components of subregional employment, both of which are relatively less strong in Connecticut 02 than in the New England region as a whole.

Since 1960, total employment in Connecticut 02 has increased by almost 21%, a rate that ranks 9th among the 29 subregions in New England. Growth in the manufacturing, trade, utilities and construction divisions has occurred at rates in excess of New England-wide averages while employment in services has grown at a rate only slightly lower than that for New England. Finance, insurance and real estate also expanded employment in the subregion at a rate slightly under the overall regional average but the absolute increase of more than 40,000 jobs in that category in Connecticut 02 accounted for about one-sixth of the total gain in New England. Like that of New England, the structure of employment in Connecticut 02 with respect to the major employment divisions has not changed significantly in recent years.

Manufacturing Employment. In 1966, manufacturing employment in Connecticut 02 was accounted for primarily by primary metals, fabricated metals and transportation equipment (50.6%) and machinery-except-electrical (22.2%). The third largest manufacturing employer in the subregion was electrical machinery which made up 6.7% of the manufacturing total. In New England as a whole these three industries made up less than 44% of the manufacturing total. Connecticut 02 comprised 9.6% of all manufacturing employment in New England, more than 23% of employment in metals-transportation equipment, more than 18% of employment in machinery-except-electrical, and more than 13% of employment in the "miscellaneous and other" group.

The subregion's gain in manufacturing employment of more than 21% between 1960 and 1966-- relatively, triple the New England-wide gain -- was attributable largely to the gain of more than 26% in metals-transportation equipment employment. Machinery-except-electrical experienced an employment rise of more than 14%, while the gain in electrical machinery was more than 28%. All manufacturing industries that were present in the subregion in 1960 gained in employment in the 1960-1966 period, including food products; textiles, apparel and leather goods; and lumber, furniture and paper products--each of which declined in New England as a whole. On balance, the employment structure within the manufacturing division in Connecticut 02 has remained quite stable in recent years.

Wages and Salaries and Earnings. In 1966 wage payments in Connecticut 02 totalled $2,152.1 million. This was more than 11% of the total New England wage bill. Per capita earnings in the subregion averaged $6,680 or almost 15% above the New England average. Construction; the utilities group; manufacturing; and finance, insurance, and real estate, in that order, had per capita earnings above the subregion's average. Moreover, all per capita earnings figures in Connecticut 02 were at least 10% above the equivalent figures for New England. Between 1960 and 1966 earnings in construction and manufacturing grew more rapidly in the subregion than in New England, but in all other major employment divisions the New England percentage increases in earnings were slightly higher.

d. Projective Analysis

Population. ADL projects the population of Connecticut 02 to increase from 823,700 to 1,194,200 in the 1965-80 study period. The projected percentage gain will be about 45% as compared to 26% for New England. The projected absolute gain of 370,500 represents 12.9% of that for New England, a percentage that is equivalent to the subregion's share of New England's projected employment increase in the same period.

Employment by Major Division. Our projections indicate a growth in total employment of more than 35.4% for Connecticut 02 between 1965 and 1980--a rate slightly higher than that projected for New England. The subregion will maintain its position as the second largest employer in New England. Subregional growth by major employment division is expected to occur at rates similar to those for the overall region as a whole, the major exception being manufacturing employment which we expect to grow significantly more rapidly in Connecticut 02 than in the New England region. The subregion is expected to maintain a relatively high portion of its total employment in the finance, insurance and real estate division, but in 1980 will otherwise closely approximate the employment structure of New England.

Manufacturing Employment. Our projections indicate that the two largest manufacturing employers in this subregion--metals-transportation equipment and machinery-except-electrical--will gain employment at about the corresponding regional rates during the projection period. Subregional employment in the lumber group, printing and publishing, and instruments is expected to increase at rates well above corresponding New England regional rates. Miscellaneous (including ordnance) is also expected to register a slight gain, contrary to New England's trend toward decline. Subregional employment in electrical machinery is also expected to grow but not as rapidly as in New England. Absolute declines in subregional manufacturing employment are projected for food products, the textiles group, and the chemicals group. With the continued overwhelming dominance of metals-transportation equipment and machinery-except-electrical, it is expected that the structure of manufacturing employment in Connecticut 02 will remain quite atypical of the manufacturing employment structure in New England as a whole.

Wages and Salaries. We have projected total wages and salaries in Connecticut 02 to rise from $1,904.5 million to $3,748.2 million between 1965 and 1980 (in constant 1965 dollars). This reflects the previously discussed projected gain in employment, together with a projected increase of 24.9% in average productivity per worker. The subregion's wage and salary total is expected to grow relatively more than New England's total in the projection period--97% vs. 85%--reflecting faster subregional growth in total employment, which outweighs slower subregional growth in average productivity. The mix of employment in Connecticut 02 already tends to favor the higher wage industries.

B. HIGHER EDUCATION AVAILABLE IN AREA B

Institutions of higher education located in Area B are shown on Figure 1 and include:

Public Institutions

- Greater Hartford Community College (Hartford) (C)
- Manchester Community College (Manchester) (C)
- Middlesex Community College (Middletown) (C)
- Tunxis Community College (new) (Farmington) (C)
- Hartford State Technical College (Hartford) (T)
- Central Connecticut State College (New Britain) (S)
- Hartford Branch of The University of Connecticut (B)

Independent Institutions

- Hartford College for Women (2 year) (6)
- Rensselaer Polytechnic Institute of Connecticut, Inc., (East Windsor Hill) (11)
- St. Joseph College (West Hartford) (13)
- St. Thomas Junior College (2 year) (Bloomfield) (14)
- Trinity College (Hartford) (15)
- University of Hartford (West Hartford) (17) (includes Ward Technical Institute)
- Wesleyan University (Middletown) (18)

The program offerings of each of these institutions of higher education in Area B are indicated on Figure 4 on the following two fold-out pages.

FIGURE 4

	AGRICULTURE	FORESTRY	ARCHITECTURE	ARTS AND SCIENCES	ENGLISH, WRITING, JOURNALISM	FOREIGN LANGUAGES	FINE ARTS	GRAPHIC ARTS	AMERICAN STUDIES	INTERNATIONAL STUDIES	RELIGION OR THEOLOGY	BUSINESS ADMINISTRATION	BUSINESS, SECRETARIAL AND DATA PROCESSING	LAW	EDUCATION	PHYSICAL EDUCATION	GENERAL EDUCATION	GUIDANCE AND COUNSELING	PSYCHOLOGICAL EXAMINER	LIBRARY SCIENCE	READING CONSULTANT	HOME ECONOMICS	DENTISTRY	PRE-DENTAL	DENTAL OFFICE ASSISTANT	PHARMACY	NURSING
STATE COLLEGE																											
CENTRAL CONNECTICUT STATE COLLEGE				A B M								B	A		SY B M	B		M		X	SY						
INDEPENDENT INSTITUTIONS																											
HARTFORD COLLEGE FOR WOMEN				A																							
RENSSELAER POLYTECHNIC																											
SAINT JOSEPH COLLEGE				B M	B M	B M					M				B M SY							B M SY					
SAINT THOMAS JUNIOR COLLEGE				A TP																							
TRINITY COLLEGE				B M	B M	B M	B				B				M SY												
UNIVERSITY OF HARTFORD				B	B M		B M					A			SY B M			M SY	M SY		SY			B			
WESLEYAN UNIVERSITY				B M D	B M	B M	B M D		B	B	B				M SY												
THE UNIVERSITY OF CONNECTICUT HARTFORD BRANCH	TP 3S			TP 4S			TP 1-2S								TP 4S	TP 1S						TP 3S				TP 4S	T 2

KEY:

A – Associate/Certificate
B – Baccalaureate
M – Master's
D – Doctorate
SY – Sixth-Year
TP – Transfer Program
S – Semesters
X – One-Year Program
C – Co-op (five year)

E 4 AREA B

DENTAL OFFICE ASSISTANT									
PHARMACY									TP 4S
NURSING									TP 2S
PHYSICAL THERAPY									TP 3S
OCCUPATIONAL THERAPY									
MEDICINE									
PRE-MEDICAL							B		
MEDICAL TECHNOLOGY							B		
MEDICAL AND BIOLOGICAL LABORATORY TECHNICIANS									
INHALATION THERAPIST									
CYTOTECHNOLOGY									
RADIOLOGICAL TECHNOLOGY									
SURGICAL TECHNICIAN									
CARDIOLOGICAL SCIENCES									
BIOLOGICAL SCIENCES	B M			B M		B	B M	B M	
NATURAL SCIENCES (PHYSICAL, LIFE, MATHEMATICAL)				B M		B M	B	B M D	
SOCIAL SCIENCES				B M		B M	B M	B M	
POLITICAL SCIENCE				M		B M	B	B	
PUBLIC AND SOCIAL SERVICE (Urban Studies, Law Enforcement)									
FIRE TECHNOLOGY AND ADMINISTRATION									
CHILD CARE									
MENTAL HEALTH WORKER									
ENGINEERING			M			B M	B		TP 4S
CHEMICAL ENGINEERING TECHNOLOGY									
CIVIL ENGINEERING TECHNOLOGY									
DATA PROCESSING TECHNOLOGY									
ELECTRICAL ENGINEERING TECHNOLOGY							A		
MANUFACTURING ENGINEERING TECHNOLOGY									
MECHANICAL ENGINEERING TECHNOLOGY									
METALLURGICAL TECHNOLOGY									
NUCLEAR ENGINEERING TECHNOLOGY									
PHYSICAL SCIENCE TECHNOLOGY									
INDUSTRIAL MANAGEMENT AND TECHNOLOGY	B								
ENGINEERING AIDES									
INDUSTRIAL–TECHNICAL									
PRE-TECHNICAL									

FIGURE 4 AREA B

	AGRICULTURE	FORESTRY	ARCHITECTURE	ARTS AND SCIENCES	ENGLISH, WRITING, JOURNALISM	FOREIGN LANGUAGES	FINE ARTS	GRAPHIC ARTS	AMERICAN STUDIES	INTERNATIONAL STUDIES	RELIGION OR THEOLOGY	BUSINESS ADMINISTRATION	BUSINESS, SECRETARIAL AND DATA PROCESSING	LAW	EDUCATION	PHYSICAL EDUCATION	GENERAL EDUCATION	GUIDANCE AND COUNSELING	PSYCHOLOGICAL EXAMINER	LIBRARY SCIENCE	READING CONSULTANT	HOME ECONOMICS	DENTISTRY	PRE-DENTAL	DENTAL OFFICE ASSISTANT	PHARMACY
TECHNICAL COLLEGE																										
HARTFORD STATE TECHNICAL COLLEGE																										
COMMUNITY COLLEGES																										
MANCHESTER COMMUNITY COLLEGE				A TP								A	A TP		B		A								A	
GREATER HARTFORD COMMUNITY COLLEGE				A TP								A	A TP				A									
MIDDLESEX COMMUNITY COLLEGE				A TP								A	A TP				A									
TUNXIS COMMUNITY COLLEGE				A TP								A	A TP				TP									

KEY:

A – Associate/Certificate
B – Baccalaureate
M – Master's

D – Doctorate
SY – Sixth-Year
TP – Transfer Program

S – Semesters
X – One-Year Program
C – Co-op (five year)

AREA B (Continued)

PRE-DENTAL	DENTAL OFFICE ASSISTANT	PHARMACY	NURSING	PHYSICAL THERAPY	OCCUPATIONAL THERAPY	MEDICINE	PRE-MEDICAL	MEDICAL TECHNOLOGY	MEDICAL AND BIOLOGICAL LABORATORY TECHNICIANS	INHALATION THERAPIST	CYTOTECHNOLOGY	RADIOLOGICAL TECHNOLOGY	SURGICAL TECHNICIAN	CARDIOLOGICAL SCIENCES	BIOLOGICAL SCIENCES	NATURAL SCIENCES (PHYSICAL, LIFE, MATHEMATICAL)	SOCIAL SCIENCES	POLITICAL SCIENCE	PUBLIC AND SOCIAL SERVICE (Urban Studies, Law Enforcement)	FIRE TECHNOLOGY AND ADMINISTRATION	CHILD CARE	MENTAL HEALTH WORKER	ENGINEERING	CHEMICAL ENGINEERING TECHNOLOGY	CIVIL ENGINEERING TECHNOLOGY	DATA PROCESSING TECHNOLOGY	ELECTRICAL ENGINEERING TECHNOLOGY	MANUFACTURING ENGINEERING TECHNOLOGY	MECHANICAL ENGINEERING TECHNOLOGY	METALLURGICAL TECHNOLOGY	NUCLEAR ENGINEERING TECHNOLOGY	PHYSICAL SCIENCE TECHNOLOGY	INDUSTRIAL MANAGEMENT AND TECHNOLOGY	ENGINEERING AIDES	INDUSTRIAL-TECHNICAL	PRE-TECHNICAL
																				A					A	A	A	A	A		A		A		X	X
	A				A				A	A			A						A		A													X		
												A							A															X		

Greater Hartford Community College, Manchester Community College, Middlesex Community College, and Tunxis Community College offer programs in Arts and Sciences (both transfer and non-transfer), business and secretarial studies, and general education. In addition, Middlesex has a pre-engineering transfer program, and offers training for prospective radiological technicians and public administration assistants. Manchester offers training for engineering aides, dental office assistants, inhalation therapists, medical and biological laboratory technicans, occupational therapy assistants, and surgical technicians along with programs for law enforcement personnel, public administrative assistants, and correctional assistants. Data processing is also offered at Manchester Community College. Specialized secretarial programs such as executive, medical, legal, and dental are available at several of the Regional Community Colleges in the area.

The Hartford State Technical College offers Associate in Applied Science degree programs in civil engineering technology, electrical engineering technology, nuclear engineering technology, mechanical engineering technology, manufacturing engineering technology, data processing technology, fire technology and administration, and industrial management technology. It also offers a one-year industrial-technician program in surveying. In addition, it offers a pre-technical college program to help students meet entrance requirements. It operates continuing education Extension Centers in New Britain, Manchester, Meriden, and Middletown.

The Ward Technical Institute of the University of Hartford offers Associate degree programs for technicians, emphasizing electrical, electronics, and electro-mechanical technology.

Two-year programs in the Liberal Arts are offered at the Hartford College for Women and at St. Thomas Junior College.

The Central Connecticut State College offers (a) programs of liberal education in its School of Arts and Sciences leading to a Bachelor of Arts degree; and (b) in its School of Education and Professional Studies: teacher education programs leading to a Bachelor of Science degree and State Certification, a business administration program leading to a Bachelor of Science degree, a two-year program in business subjects (secretarial studies, accounting, and marketing) leading to an Associate in Science degree, and a study program leading to a Bachelor of Science degree for graduates of a three-year accredited course in nursing. The College also participates with the other three State Colleges in a joint undergraduate program in school library science.

At the graduate level Central Connecticut State College offers programs leading to the Master of Science degree and the Master of Arts degree. New programs include a Master of Arts in mathematics, a Master of Arts in history, and a Master of Science in education of guidance counselors. The college has established an independent six-year program in reading and continues to cooperate with The University of Connecticut in Sixth-year programs in other areas of professional education leading to the Professional Diploma in Education.

The College has an Evening Division and Extension Program and also conducts a Summer Session and offers special programs and institutes. The Industrial Arts Education department has extended its day Bachelor of Science program to the Evening Division on a full time basis, and has received approval for a new Bachelor of Science program in Industrial Technology. The latter program will prepare students for mid-management positions in business and industry, and will also serve as a transfer program for students from the State Technical Colleges. Besides academic subjects the program includes an internship in business or industry.

The Hartford Branch of the University of Connecticut offers the following programs of study:

Agriculture - 3 semesters

Arts and Sciences - 4 semesters

Business Administration - 4 semesters

Education - 4 semesters in major field of teaching

Engineering - 4 semesters

Fine Arts - 1 or 2 semesters

Home Economics - 3 semesters

Nursing - 2 semesters

Pharmacy - 4 semesters

Physical Education - 1 semester

Physical Therapy - 3 semesters

Certificate courses and programs are organized on demand to promote the vocational and educational competency of employees in industry, business, and the professions. Advanced work and graduate courses can also be presented at the Branch when demand merits.

Baccalaureate programs in the Arts and Sciences are offered at St. Joseph College, Trinity College, University of Hartford, and Wesleyan University. Master's degree programs are offered: by Rensselaer Polytechnic Institute in engineering science, computer science, management, mechanical engineering, and mathematics; by St. Joseph College in liberal arts and education; by Trinity College in liberal arts and education; and by Wesleyan University in liberal arts education, and liberal studies. In addition, Wesleyan offers Ph.D. programs in mathematics and world music.

C. UNMET NEEDS IN AREA B

As of June, 1970, there were 5,811 technicians employed and 105 job vacancies for technicians in the general Hartford area (see the 1970 study: The Need for Technicians in Connecticut, by the Labor Education Center of The University of Connecticut). While the current technician job market in the Hartford area is apparently not much better now than it was 9 months ago, substantial needs for technicians in the area are projected in the next five years.

The study mentioned above indicated that technician employment in the general Hartford area was greatest for aeronautical and aerospace technicians (1,952), electronic technicians (1,490), and mechanical-tool technicians (834). Vacancies as of June, 1970, in those occupations were, respectively: zero, 23, and 20. The largest number of openings was for civil engineering technicians (38). Major projected needs for new personnel by 1975 by technician category are for electronic technicians (755), mechanical-tool technicians (529), and aeronautical and aerospace technicians (501, almost all of which would be for replacements). Additional technical personnel also will be needed in Bristol.

Bristol currently has a surplus of secretaries and stenographers who commute to jobs in Hartford. However, it appears that some insurance companies are planning to open branch offices in Bristol. This will probably significantly decrease the number of clerical workers commuting to Hartford. The Capitol Region Planning Commission is concerned about the high concentration of employment in the aircraft industry in the region and is trying to promote industrial diversification. The following industries appear to be the most suitable for the region: paper products, printing and publishing, plastics fabrication, containers (primarily metal and glass), pharmaceuticals, machinery, food, and electric motors and components.

In January, 1968, (before the current economic slump) the following occupations were in critically short supply (i.e., there were 100 or more job openings) in the Hartford labor market area: electrical engineers and assistants, mechanical engineers and assistants, mechanical draftsmen, registered nurses, secretaries and clerk typists, computing and account-recording personnel, salesmen (especially real estate and insurance), merchandising specialists, machinists, toolmakers, polishing-smoothing-and general abrading trades, specialists in turning and boring operations, other metal machining, and all-around general machine operators. Shortages in the machine trades are not as critical as the shortages in other occupational areas because growth in employment opportunities in the former occupations is expected to be slow through 1975. On the other hand, growth in employment requirements in the professional, technical, managerial, clerical, and sales occupations mentioned is expected to be substantial through 1975 in Area B.

A recent study[8] suggests that Connecticut as a whole needs at least 200 persons who can function as urbanologists or "urban generalists" possessing the multi-disciplinary skills required to deal with the broad spectrum of interacting urban problems. Since this area is one of the most urbanized it is likely that a considerable number of such individuals are needed in Area B at the present time.

A 1968 study[9] found that a number of vacancies are anticipated in the printing industry in the state as a whole. Shortages were expected to be especially great from 1968 to 1973 in the bindery (885) and composing (1,117) departments as well as in lithographic preparation and pressrooms (836). Because the Hartford region contains about 25% of employment in the printing industry, it is likely that demand for these workers may exceed their availability in Area B over the next five to six years. Industry job vacancies at the time of the study (1968) amounted to 617.

The 1967 manpower study, Health Service Occupations, found 1,210 vacancies in those occupations in Area B in 1967. The study forecast a need in the area for approximately 11,250 additional health service personnel in the 1967-1971 period, and for approximately 20,800 additional personnel in nine-year period 1967 to 1976. Among the health service occupations (the study did not encompass needs for doctors and dentists), the greatest additional needs in Area B from 1967-1976 were projected to be for: nurses (9,717), nurses' aides (3,425), medical and dental secretaries and receptionists (1,498), dental assistants and hygienists (1,240), technicians of all categories (925), and aides of all categories other than nurses' aides (714). By far the greatest number of these additional personnel are needed and will be needed in the Hartford labor market area.

Additions to the curriculum which are planned for the next several years will improve the supply/demand balance in many of these occupational areas. Middlesex Community Colege plans to add programs in the following areas: engineering aide, medical laboratory technician, and mental health worker. Greater Hartford Community College anticipates adding programs for: child care, data processing, medical laboratory technician, public administration assistant, medical records technician, community health aide, social service aide, and engineering aide. Manchester Community College expects to add programs in: library technical assistant, nursing -- associate degree, publication assistant, intravenous technician, media technician, and research associate. The new Tunxis Community College plans to add in 1971 programs in: graphic design, design science, child care, law enforcement, social service aide, dental hygiene, dental technology, inhalation therapy, physician's assistant, nursing -- associate degree, surgical technician, X-ray technician, data processing, and food service administration. However, with the great demand for nurses in the area, unless the programs at Manchester and Tunxis are geared to take large numbers of students, future nursing needs probably will not be met by these programs alone.

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[8] Urban Generalist: A Manpower Need for Connecticut, a study by B. J. Esposito, et. al., funded by the Connecticut Research Commission, September, 1969.

[9] Connecticut Printing Industry Occupations, a study for the Connecticut Department of Education by the Labor Education Center of The University of Connecticut, November, 1968.

In summary, in the period from 1970 to 1980 projected needs are expected to exceed the supply of higher education trained personnel in Area B primarily in the following general types of occupations:

- medical and dental professionals and paraprofessionals
- technicians (including those trained in certificate level programs as well as in two-year Associate degree programs)
- welfare and social workers
- public administrators
- managers and supervisors for business and industry
- teachers with specialized training (for teaching the disadvantaged, special education classes, industrial arts, and vocational counseling)
- pollution abatement and environmental control
- police science and law enforcement

While some efforts have been made to establish interinstitutional cooperation and joint planning among institutions of higher education in Area B, these efforts have largely been limited to those among independent institutions and they have not yet produced particularly noteworthy results. Substantial opportunities exist for providing more and better options for students at minimum cost to the state through the establishment of an effective consortium in the greater Hartford area.

CHAPTER VII

STUDY OF AREA C -- (THE NORTHEASTERN CONNECTICUT AND THE WINDHAM PLANNING REGIONS)

A. SOCIOECONOMIC FACTORS

1. Data from State and Planning Region Sources

Noninstitutional population in Area C has grown 29.6% between 1959 and 1969 while the labor force has grown 28% over the same period (see Table 17 on page A-1). This area historically has been an exporter of workers to other areas, especially to the Hartford area. Population density is well below the state average and per capita retail sales are the lowest in the entire state.

The employment mix between the manufacturing and nonmanufacturing sectors has shifted significantly in the last several years (See Table 21 on page A-5). Between 1965 and 1969 the proportion of the area's jobs in the manufacturing sector changed from 45.0% to 38.2%, while nonmanufacturing jobs moved from 55.0% to 61.8%. Within the manufacturing sector the textile industry is the largest employer in Area B. However, employment in textiles dropped from 4,970 in December, 1965, to 4,610 in December, 1969. Even more dramatic was the shift in the area's proportion of total employment in textiles during that period: from 16.2 % of the labor force in 1965 to 13.3% in 1969. Continued employment decline in textiles is expected.

Within the nonmanufacturing sector from 1965 to 1969, employment increased most in the following categories: Government (including public educational institutions) -- 2,260 new jobs; Trade -- 960 new jobs; and Service -- 880 new jobs.

In 1960 Area C had a larger percentage of its employment in the "operatives" occupational category than any of the other five areas (See Table 18 on page A-2). This reflects the relatively low level of skills required by the area's industry. Further, in 1960 among the six areas of the state, Area C had the lowest proportion of its labor force employed in the following occupational categories: sales; managers, officials and proprietors; professional and technical; and clerical.

As of mid-September, 1970, unemployment in the labor market areas of Area C was as follows: Danielson -- 6.5% (870 men and 730 women); and Willimantic -- 4.8% (580 men and 520 women).

2. Information From ADL's 1968 Study of the New England Economy

The 1968 ADL study, for purposes of analysis, aggregated both Area C and Area D into its subregion "Connecticut 01". Since most of the economic analysis of Connecticut 01 dealt with activities in the southeastern part of the state, we are presenting those analyses and projections in Chapter VIII concerning Area D.

B. HIGHER EDUCATION AVAILABLE IN AREA C

The following institutions of higher education are located in Area C as shown in Figure 1:

Public Institutions

Eastern Connecticut State College (Willimantic)

The University of Connecticut (Storrs)

Independent Institution

Annhurst College (South Woodstock) (2)

Eastern Connecticut State College offers two four-year undergraduate programs: a teacher education program for elementary, junior high and secondary school teaching culminating in a Bachelor of Science or Bachelor of Arts degree; and programs of liberal arts and sciences (English, history, mathematics, biological science, applied social relations, fine arts, and psychology) culminating in either the Bachelor of Science or the Bachelor of Arts degree. In addition, extensive summer session and Master's degree programs are conducted primarily for teachers in service. The evening college program offers introductory courses in both liberal arts areas and teacher education areas for persons pursuing undergraduate studies for an Associate degree on a part-time basis.

The College is continuing its Special Admissions program for approximately thirty students, and is in the second year of a federally-funded community relations program assisting Willimantic's Spanish-speaking residents to move into the mainstream of city life.

The University of Connecticut offers baccalaureate degree programs in its College of Liberal Arts and Sciences, in its College of Agriculture, and in its schools of business administration, education, engineering, fine arts, home economics, nursing, pharmacy, physical education, and physical therapy. The Division of University Extension offers certificate programs and courses upon evidence of sufficient demand. The Graduate School offers Master's degree programs in liberal

FIGURE 5 AREA

	AGRICULTURE	FORESTRY	ARCHITECTURE	ARTS AND SCIENCES	ENGLISH,WRITING,JOURNALISM	FOREIGN LANGUAGES	FINE ARTS	GRAPHIC ARTS	AMERICAN STUDIES	INTERNATIONAL STUDIES	RELIGION OR THEOLOGY	BUSINESS ADMINISTRATION	BUSINESS, SECRETARIAL AND DATA PROCESSING	LAW	EDUCATION	PHYSICAL EDUCATION	GENERAL EDUCATION	GUIDANCE AND COUNSELING	PSYCHOLOGICAL EXAMINER	LIBRARY SCIENCE	READING CONSULTANT	HOME ECONOMICS	DENTISTRY	PRE-DENTAL	DENTAL OFFICE ASSISTANT	PHARMACY	NURSING	PHYSICAL THERAPY
STATE COLLEGE EASTERN CONNECTICUT STATE COLLEGE				B	B		B								SY B M		A										B	
THE UNIVERSITY OF CONNECTICUT STORRS	B M D	B		B M D	B M D		BM		M			B M D	B	D	SY B M D	B		M SY D				B M	D	B		BM	B	B
INDEPENDENT INSTITUTION ANNHURST COLLEGE				B	B							B			B													

KEY:

A – Associate/Certificate
B – Baccalaureate
M – Master's

D – Doctorate
SY – Sixth-year
TP – Transfer Program

S – Semesters
X – One-Year Program

URE 5 AREA C

DENTISTRY	PRE-DENTAL	DENTAL OFFICE ASSISTANT	PHARMACY	NURSING	PHYSICAL THERAPY	OCCUPATIONAL THERAPY	MEDICINE	PRE-MEDICAL	MEDICAL TECHNOLOGY	MEDICAL AND BIOLOGICAL LABORATORY TECHNICIANS	INHALATION THERAPIST	CYTOTECHNOLOGY	RADIOLOGICAL TECHNOLOGY	SURGICAL TECHNICIAN	CARDIOLOGICAL SCIENCES	BIOLOGICAL SCIENCES	NATURAL SCIENCES (PHYSICAL, LIFE, MATHEMATICAL)	SOCIAL SCIENCES	POLITICAL SCIENCE	PUBLIC AND SOCIAL SERVICE (Urban Studies, Law Enforcement)	FIRE TECHNOLOGY AND ADMINISTRATION	CHILD CARE	MENTAL HEALTH WORKER	ENGINEERING	CHEMICAL ENGINEERING TECHNOLOGY	CIVIL ENGINEERING TECHNOLOGY	DATA PROCESSING TECHNOLOGY	ELECTRICAL ENGINEERING TECHNOLOGY	MANUFACTURING ENGINEERING TECHNOLOGY	MECHANICAL ENGINEERING TECHNOLOGY	METALLURGICAL TECHNOLOGY	NUCLEAR ENGINEERING TECHNOLOGY	PHYSICAL SCIENCE TECHNOLOGY	INDUSTRIAL MANAGEMENT AND TECHNOLOGY	ENGINEERING AIDES	INDUSTRIAL–TECHNICAL	PRE-TECHNICAL
				B													B	B		B																	
D	B		BM	B	B		D	B	B					B M D		B M D	B M D	B M D		M D				B M D													
														B		B	B	B																			

arts and sciences, agriculture, education, engineering, medical science, pharmaceutical science, business administration, home economics, music, physical education, and theater. Doctoral programs are offered in the arts and sciences, agriculture, education, engineering, medical science, and pharmaceutical science. The School of Dental Medicine offers a D.M.D. program; the School of Law offers a J.D. program; the School of Medicine offers an M.D. program; and the School of Social Work offers an M.S.W. program.

Annhurst College offers baccalaureate degree programs in the arts and sciences and in education (elementary, secondary, and business). At present there is no community college in the area, although interest is high, curriculum programs have been suggested, and a proposal has been submitted to the Commission for Higher Education to establish a new two-year institution in the middle of the area.

C. UNMET NEEDS IN AREA C

This area's primary need is for economic development. There is a large number of unskilled Puerto Ricans resident in the area who came primarily to obtain employment in the textile industry. Also, as Table 18 shows, most of the industries in the area require relatively unskilled workers. Skilled personnel are presently needed mainly by the educational institutions and hospitals in the area.

The Windham Regional Planning Agency's forecasts for the number of professional employees expected in the region in 1980 provide helpful indicators of the future need for college-educated persons. In general, the labor force of the area is expected to shift in the direction of greater numbers of white collar workers and college and university-related personnel. A decrease in the average age of the area's residents is also anticipated. Professional staff at The University of Connecticut are expected to increase from 2,300 in 1970 to around 3,500 in 1980, while professional personnel at the Mansfield Training School are likely to remain unchanged at 130 persons. The Windham Memorial Hospital is expected to increase its professional staff from 130 in 1970 to 190 in 1980. Eastern Connecticut State College will probably expand its professional staff from 130 in 1970 to around 220 in 1980. Over the same period Electro-Motive Company (a division of Raytheon) is expected to increase its complement of administrative and white collar personnel while decreasing the number of blue collar workers employed. The Rogers Corporation expects to add about thirty people by 1980 of which a good proportion probably will need to be technically trained. At the same time employment at American Thread is expected to decrease from 1,450 in 1970 to about 1,150 in 1980.

Investigations by Dr. Berry of the Rogers Corporation indicate that sales and research firms would be most likely to thrive in the area. His calculations show that the area could employ forty new technically-trained people each year. This estimate includes people trained for technical-supervisory and technical-clerical jobs as well as technical research assistants.

Information given us by the Dean of Academic Affairs of Eastern Connecticut State College suggests that there are two major areas where additions to the College's curriculum would be of most value to the region. One is the ecology-related processes and functions of environmental sanitation, garbage disposal, sewage management, testing programs for polluted areas, and land management for recreational areas and for other uses. The other area involves the expansion of programs in social work, especially courses geared toward training individuals to counsel disadvantaged people in the cities and rural areas. A school librarian program is also needed. In the field of education the most critical teacher shortages exist in early childhood education and in special education for exceptional children. Also, an educational program in law enforcement and justice is deemed useful for the region.

Area C is almost exactly congruent with the outer boundaries of the Danielson and Willimantic (minus the towns of Andover and Hebron) labor market areas. The September, 1967, manpower needs of Health Service Occupations found a total of 115 job vacancies in the two labor market areas combined. By 1971 for the two labor market areas combined (Area C), 1,080 additional health service personnel were forecast as needed. From 1967 to 1976 a total of 2,106 additional health services personnel were forecast as being required in Area C. Occupations with the largest forecast needs in Area C for additional personnel between 1967 and 1976 were: nurses (654); nurses' aides (441), aides other than nurses' aides (407), particularly mental retardation aides in the Willimantic labor market area; technicians of all types (105); and medical and dental secretaries and receptionists (103).

The programs recommended for a new Northeastern Regional Community College appear to be in line with diagnosed manpower needs. Curricula in liberal arts, health services occupations, environmental studies, technical studies with emphasis on materials-oriented industries, business/secretarial studies, and continuing education have been proposed.

We strongly recommend the establishment of a community college in Area C. This is virtually the only area of the state where a non-selective and community-oriented, low tuition higher education institution does not exist within commuting distance of most residents. Further, since comprehensive public community colleges are unique among educational institutions in their mission to stimulate and support social and economic development in their surrounding service areas, a regional community college in Area C would help significantly to meet identified developmental needs in the area.

CHAPTER VIII

STUDY OF AREA D -- (THE SOUTHEASTERN CONNECTICUT PLANNING REGION)

A. SOCIOECONOMIC FACTORS

1. Data from State and Planning Region Sources

Noninstitutional population in the Southeastern Region has grown about 24% between June, 1959, and June, 1969, while the labor force has grown 21.7% over the same period (See Table 17). Population density and per capita retail sales are both below the state average. In this region, as in many of the others, the mix of employment has been shifting toward the nonmanufacturing sector. This change has been rather substantial over the last four years (See Table 22).

Nonmanufacturing employment now accounts for about 60% of all workers in Area D. Within this sector the greatest employment growth between 1965 and 1969 was in the following categories: Government -- 1,890 new jobs; Trade -- 1,500 new jobs, largely in retail trade; and Service -- 1,140 new jobs. Other categories of nonmanufacturing employment remained quite stable in Area D over the four-year period.

When compared with the other five areas of the state in 1960, Area D employed a larger proportion of its labor force in the "craftsmen and foremen" and the "service (ex-household)" categories (See Table 18). It employed a smaller proportion of "operatives," "clerical," and "managers, officials and proprietors" than was true for the state as a whole.

As of mid-September, 1970, unemployment in the labor market areas of Area D was as follows: New London -- 5.0% (1,800 men and 1,100 women), including a number of professionals, particularly in the engineering and related fields, although openings existed for electrical technicians and in the skilled trades; Norwich -- 6.2% (790 men and 810 women).

2. Information from ADL's 1968 Study of the New England Economy

As indicated earlier, information presented in this section deals with both Area C and Area D in combination. But since the analyses and forecasts with respect to Connecticut Subregion 01 treat economic activity largely in the southeastern part of the state, we elected to use this information to enrich our discussion of Area D, the southeastern corner of Connecticut. The boundaries of Connecticut 01 are shown on Figure 2.

Connecticut Subregion 01 is forecast to share 3.5% of employment growth in New England from 1965 to 1980. Employment in this subregion is projected to grow 27.2% in that period.

a. General Profile

Connecticut 01 located in the eastern part of Connecticut, includes the Northeastern Connecticut, Windham, and the Southeastern Connecticut Planning Regions, and the Labor Market Areas of Danielson, Norwich, and most of New London and Willimantic. The major cities in Connecticut 01 are Norwich and New London which are linked to each other as well as Providence on the north and New Haven on the south by the Connecticut Turnpike and/or I95.

Although Connecticut 01 is the largest geographic subregion in Connecticut, it is the least densely populated and least industrialized part of the state, with the smallest percentage of the state's total employment. Comprised of rolling uplands and sandy soil, this area is bisected in the south by the Thamès river.

b. Agricultural Activity

Agricultural production in this subregion amounted to about $25 million in 1965 which represented a slight increase from the level of 1959. Agriculture in this subregion is largely oriented toward dairy and poultry production. It has seen a substantial decline in the number of farms and the acreage cropped between 1959 and 1964.

c. Historical Analysis

Population. Connecticut 01 had 308,230 residents in 1965. This was 2.8% of the New England total, the twelfth highest total among the subregions in New England and fourth highest among the five subregions in Connecticut. Between 1960 and 1965 the population of Connecticut 01 grew by 13.5%, more than double the New England rate of growth. In the same five-year period employment in the subregion grew by more than 20%. Since 1965 the population of Connecticut 01 has continued to grow steadily; by 1967 the net increase over the 1960 level was 19%.

Employment by Major Division. Connecticut 01 provided 86,990 jobs in 1966, ranking thirteenth among the subregions of New England. The employment structure of the subregion was dominated by the manufacturing industries which accounted for almost 58% of Connecticut 01's total employment in 1966 compared to 47% of New England's total employment that was in manufacturing. Services made up a slightly higher proportion of total employment in the subregion than in New England -- 13% versus 12%. Trade is actually the second largest employer in Connecticut 01, but weighed against the heavy manufacturing orientation of the subregion it accounted for 18% of employment locally in 1966 compared to 24% throughout New England.

Since 1960 total employment in Connecticut 01 has risen by 25%, a rate surpassed by only three other subregions in New England. Manufacturing, trade, and services -- the three dominant employment divisions in the subregion -- have each grown at similar and slightly higher rates in the same period; like that of New England, the structure of employment in the subregion with respect to the major employment divisions has not changed significantly in recent years. Among the other major employment divisions it is significant to note that construction employment has grown very little in the subregion since 1960 in spite of generally rapid growth in the subregion's other employment divisions.

Manufacturing Employment. In 1966 the largest components of manufacturing employment in Connecticut 01 were primary metals, fabricated metals and transportation equipment (40.8%) and textiles, apparel and leather goods (18.8%). These same two groups were also the largest employers in the manufacturing division throughout New England, but on an overall regional basis accounted for a combined portion of less than 40% of manufacturing employment. Connecticut 01 also had a large concentration of manufacturing employment in the "miscellaneous and other" category (21.2%), relatively four times as much as New England overall. The subregion accounted for 3.2% of all manufacturing employment in New England, but more than 6% of employment in primary metals, fabricated metals and transportation equipment, and more than 14% of New England employment in the "miscellaneous and other" category.

The subregion's increase in manufacturing employment of 27% between 1960 and 1966 -- relatively four times the New England-wide increase -- was attributable to a gain of 53% in primary metals. fabricated metals and transportation equipment and a gain of 30% in "miscellaneous and other", which outweighed the decline of about 1% recorded for the other larger employer, textiles, apparel and leather goods. Employment in stone, clay and glass and machinery-except-electrical also grew impressively in the six-year period. In recent years the structure of employment within the manufacturing division in Connecticut 01 has seen the metals-transportation equipment group gain in relative strength primarily at the expense of textiles, apparel and leather goods.

Wages and Salaries, and Earnings. In 1966 wage payments in Connecticut 01 totalled $570.3 million. This was about 3% of the total New England wage bill. Per capita earnings in the subregion averaged $6,556 or more than 12% above the New England average. Construction, the utilities group, manufacturing, and finance, insurance and real estate, in that order, had per capita earnings above the subregion average. Moreover, all per capita earnings figures in Connecticut 01 were at least 10% above the equivalent figures for New England. Between 1960 and 1966 earnings in construction and manufacturing grew more rapidly in the subregion than in New England, but in all other major employment divisions the regional percentage increases in earnings were slightly higher.

d. Projective Analysis

Population. ADL projects the population of Connecticut 01 to increase from 308,230 to 408,700 in the 1965-80 study period. The projected percentage gain will be about 33% as compared to 26% for New England. The projected absolute gain of 100,500 represents 3.5% of that for New England, a percentage that is equivalent to the subregion's share of New England's projected employment increase in the same period.

Employment by Major Division. Our projections indicate a growth in total employment of about 27% for Connecticut 01 between 1965 and 1980 -- a rate slightly higher than that projected for New England. Subregional employment in manufacturing, trade, and finance, insurance and real estate is expected to grow at well above the corresponding rates for New England. Employment in the utilities group in Connecticut 01 is expected to rise in the projection period despite a projected downward trend for New England as a whole. Services employment is expected to increase more slowly in this subregion than in the New England region as a whole, while an absolute decline is anticipated for construction employment contrary to the regional trend. In 1980 it is expected that the proportion of employment accounted for by manufacturing in the subregion will be slightly less than it was in 1965.

Manufacturing Employment. Our projections indicate that subregional employment in metals-transportation equipment will grow at about four times the corresponding New England rate during the 1965-1980 projection period, and that metals-transportation equipment will have significantly increased its dominance in the subregional manufacturing employment structure. An absolute decline in employment is projected for the subregion's second largest manufacturing employer -- the textiles group -- but to a lesser extent than in New England as a whole. A slight absolute decline is also projected for employment in food products; all other manufacturing industries currently represented in Connecticut 01 are projected to gain employment at rates well in excess of the corresponding New England regional rates for the projection period. Particularly noteworthy are the projected rates of growth for stone, clay and glass; machinery-except-electrical; and miscellaneous-including-ordnance (contrary to the regionwide trend toward decline). With the continued overwhelming dominance of metals-transportation equipment, the structure of manufacturing employment in Connecticut 01 is expected to remain quite atypical of the New England regional pattern.

Wages and Salaries

We have projected total wages and salaries in Connecticut 01 to rise from $533,7 million to $ 990.3 million between 1965 and 1980 (in constant 1965 dollars). This reflects the previously-discussed projected gain in employment, together with a projected increase of 28.4% in average productivity per worker. The subregion's wage and salary total is expected to grow relatively more than the New England region's total in the projection period -- 86% versus 85% -- reflecting faster subregional growth in total employment, which outweighs slower subregional growth in average productivity. The mix of employment in Connecticut 01 already tends to favor the higher wage industries.

B. HIGHER EDUCATION AVAILABLE IN AREA D

The following institutions of higher education are located in Area D as shown on Figure 1. Program offerings by the institutions in Area D are indicated on the Figure 6 fold-out.

Public Institutions

Mohegan Community College (Norwich)

Thames Valley State Technical College (Norwich)

The Groton Branch of The University of Connecticut

U. S. Coast Guard Academy (New London)

Independent Institutions

Connecticut College (New London) (4)

Mitchell College (New London) (7)

The new Mohegan Community College is beginning to offer two-year transfer programs in the Arts and Sciences plus non-transfer programs in general studies, and also Associate degree and Certificate programs in the general curriculum areas of business and secretarial studies and public and social service.

The Thames Valley State Technical College offers two-year programs leading to the Associate degree in Applied Science in seven areas: chemical engineering technology, data processing, engineering technology, electrical engineering technology, fire technology and administration, industrial management technology, manufacturing engineering technology, and mechanical engineering technology. In addition, it offers a one-year pre-technical college program, a one-year industrial-technical certificate program, and it operates continuing education Extension Centers in Willimantic and Danielson.

The Groton Branch of The University of Connecticut makes available the following undergraduate offerings which may be transferred to Bachelor's degree programs:

Arts and Sciences - 4 semesters

Agriculture - 3 semester

Business Administration - 4 semesters

Education - 4 semesters in major teaching field

Engineering - 4 semesters

Fine Arts - 1 or 2 semesters

Home Economics - 3 semesters

Nursing - 2 semesters

Pharmacy - 4 semesters

Physical Education - 1 semester

Physical Therapy - 3 semesters

In addition, certificate programs and courses are offered at the Branch on demand, as are occasional advanced and graduate courses.

Bachelor's degree programs are offered at the U. S. Coast Guard Academy in engineering and from courses in ocean science and the general social sciences.

Connecticut College offers Bachelor degree programs in education and in the arts and sciences. It also offers Master's degree programs in education (M.A.T.) and in liberal arts (M.A.). These are the only graduate programs offered regularly in all of Area D. Thirteen Master's degrees were awarded in 1970, and half were in psychology.

Mitchell College is an independent, non-denominational, two-year college for men and women. It grants the degrees of Associate in Arts and Associate in Science. Two-year programs are offered in the fields of engineering, physical science, life science, general business studies, accounting, executive secretarial studies, physical education, and general studies. Transfer programs are offered in business administration, engineering, physical science, life science, physical education, general studies and liberal arts. It also offers non-credit courses in refresher programs and part-time programs designed to meet local cultural and vocational needs.

FIGURE 6 AR

	AGRICULTURE	FORESTRY	ARCHITECTURE	ARTS AND SCIENCES	ENGLISH, WRITING, JOURNALISM	FOREIGN LANGUAGES	FINE ARTS	GRAPHIC ARTS	AMERICAN STUDIES	INTERNATIONAL STUDIES	RELIGION OR THEOLOGY	BUSINESS ADMINISTRATION	BUSINESS, SECRETARIAL AND DATA PROCESSING	LAW	EDUCATION	PHYSICAL EDUCATION	GENERAL EDUCATION	GUIDANCE AND COUNSELING	PSYCHOLOGICAL EXAMINER	LIBRARY SCIENCE	READING CONSULTANT	HOME ECONOMICS	DENTISTRY	PRE DENTAL	DENTAL OFFICE ASSISTANT	PHARMACY
FEDERAL INSTITUTION U.S. COAST GUARD ACADEMY				B																						
INDEPENDENT INSTITUTIONS CONNECTICUT COLLEGE				BM	BM	B	BM								BM							B				
MITCHELL COLLEGE				A								TP				A TP	A									
THE UNIVERSITY OF CONNECTICUT GROTON BRANCH	TP 3S			TP 4S			TP 1–2S					TP 4S			TP 4S	TP 1S						TP 3S				TP 4S
COMMUNITY COLLEGE MOHEGAN COMMUNITY COLLEGE				A TP								A					A									
TECHNICAL COLLEGE THAMES VALLEY STATE TECHNICAL COLLEGE																										

KEY:

A – Associate/Certificate
B – Baccalaureate
M – Master's
D – Doctorate
SY – Sixth-Year
TP – Transfer Program
S – Semesters
X – One-Year Program
C – Co-op (five-year)

URE 6 AREA D

DENTISTRY	PRE-DENTAL	DENTAL OFFICE ASSISTANT	PHARMACY	NURSING	PHYSICAL THERAPY	OCCUPATIONAL THERAPY	MEDICINE	PRE-MEDICAL	MEDICAL TECHNOLOGY	MEDICAL AND BIOLOGICAL LABORATORY TECHNICIANS	INHALATION THERAPIST	CYTOTECHNOLOGY	RADIOLOGICAL TECHNOLOGY	SURGICAL TECHNICIAN	CARDIOLOGICAL SCIENCES	BIOLOGICAL SCIENCES	NATURAL SCIENCES (PHYSICAL, LIFE, MATHEMATICAL)	SOCIAL SCIENCES	POLITICAL SCIENCE	PUBLIC AND SOCIAL SERVICE (Urban Studies, Law Enforcement)	FIRE TECHNOLOGY AND ADMINISTRATION	CHILD CARE	MENTAL HEALTH WORKER	ENGINEERING	CHEMICAL ENGINEERING TECHNOLOGY	CIVIL ENGINEERING TECHNOLOGY	DATA PROCESSING TECHNOLOGY	ELECTRICAL ENGINEERING TECHNOLOGY	MANUFACTURING ENGINEERING TECHNOLOGY	MECHANICAL ENGINEERING TECHNOLOGY	METALLURGICAL TECHNOLOGY	NUCLEAR ENGINEERING TECHNOLOGY	PHYSICAL SCIENCE TECHNOLOGY	INDUSTRIAL MANAGEMENT AND TECHNOLOGY	ENGINEERING AIDES	INDUSTRIAL-TECHNICAL	PRE-TECHNICAL
																		B						B													
																BM	BM	BM																			
																	A TP			A				A TP													
			TP 4S	TP 2S	TP 3S																			TP 4S													X
																					A				A		A	A	A	A				A		X	X

C. UNMET NEEDS IN AREA D

The 1967 study, Health Service Occupations, found 3,194 persons employed in those occupations in Area D. At that time 269 job vacancies existed. From 1967 to 1971 Area D was forecast to need 1,972 additional health service workers. From 1967 to 1976 the need for additional health service workers was forecast at 3,570. No where near that number is being trained in the area. By general occupational category, the greatest needs for additional personnel between 1967 and 1976 are projected for nurses (754); aides other than nurses' aides (665), primarily psychiatric aides (593) in the Norwich labor market area; nurses' aides (599); secretaries and receptionists (279); technicians of all types (148); and dental assistants and hygienists (145).

The curriculum programs planned for the newly established Mohegan Community College are responsive to most of these needs. Child care will be offered in 1971 and a program in nursing has been proposed to begin in 1972. The College plans to add programs to train X-ray technicians, inhalation therapists, medical secretaries, dental assistants, medical assistants, and intravenous technicians over the next ten years.

The College also proposes to offer law enforcement and social service aide programs in 1971, and in the following year a program for prospective public administration assistants will be introduced.

The 1970 study, The Need for Technicians in Connecticut, found 2,795 technicians employed in the eastern Connecticut area in June, 1970. Technician vacancies in the area at that time totalled 29. By June, 1975, additional technicians in the number of 1,216 were forecast to be needed, 424 because of the creation of new jobs and 763 because of retirements or other withdrawals. The greatest needs were forecast for mechanical-tool technicians (448), electronic technicians (339), and chemical technicians (113) over the five-year period.

Pfizer plans to move its headquarters into the area in the near future. This will add about 2,500 additional jobs. Also, a number of firms based in New York City are expected to move branch plants and offices to the Norwich area, increasing the demand for technical and clerical personnel.

The fairly substantial government employment is due to the presence of the Norwich State Hospital, the Submarine Base and the Naval Underwater Sound Laboratory in this area. Fifty-five percent of manufacturing employees in the New London area are working for the Electric Boat Division of General Dynamics. The firm manufactures atomic submarines. Needless to say, the cutback in defense expenditures has been felt in this region.

Demand for skilled labor is projected to be strong in the metal, transportation equipment, and chemical and plastics industries. Opportunities for employment in oceanography are likely to expand in the area because it is established, it seems to be attracting above average interest, and it appears to be well placed to take advantage of the growth that will inevitably occur in this field. It appears that the projected need for technicians will not be met by the Thames Valley State Technical College. The required number of graduates will be short in the areas of chemical, electrical, mechanical-tool and electro-mechanical technologists.

CHAPTER IX

STUDY OF AREA E -- (THE SOUTH CENTRAL CONNECTICUT AND THE CONNECTICUT RIVER ESTUARY PLANNING REGIONS)

A. SOCIOECONOMIC DATA

1. Data from State and Planning Region Sources

Noninstitutional population growth in Area E has been 15.2% between June, 1959, and June, 1969, while the labor force has grown at almost exactly the same rate, 15.9% (See Table 17). Population density runs considerably above average in South Central Connecticut but below average in the Connecticut River Estuary Region. However, in both of these regions, per capita retail sales are above the state average.

A substantial shift in employment structure is taking place in Area E. In the period 1965 to 1969 the proportion of nonmanufacturing employees in total nonagricultural employment increased from 62.8% (117,520 jobs) to 67.0% (133,770 jobs). And within this major sector the absolute number of employees decreased in construction and in transportation -- including railroads. Major gains were registered during the four-year period in Service (6,450 new jobs) which went from 16.1% of total nonagricultural employment to 18.3%; Trade, especially retail, (4,300 new jobs) from 10.0% to 20.1%; and Government (4,250 new jobs) which grew from 10.0% to 11.5% of total nonagricultural employment.

In the manufacturing sector of Area E in the 1965 to 1969 period, there was a decline in the number of jobs in the following employment categories: Ordnance; Apparel and Leather; Chemical; Stone, Clay Clay and Glass; Machinery; Silverware; Transportation Equipment; and Other Manufacturing (See Table 23). A substantial increase was registered in the number of new jobs (1,160) in Primary and Fabricated Metals.

In 1960 Area E employed a larger proportion of "professional and technical," "clerical," and "sales" personnel than was true for the state as a whole. The area employed proportionally fewer "service (ex-household)" personnel.

Unemployment as of mid-September, 1970, in the labor market areas of Area E was as follows: Meriden -- 8.0% (2,100 men and 2,000 women); and New Haven -- 4.9% (5,400 men and 3,600 women). Area E also includes the southern half of the Middletown labor market area in which mid-September, 1970, unemployment was at 5.9% (1,500 men and 1,200 women).

2. Information from ADL's 1968 Study of the New England Economy

Connecticut Subregion 03 is forecast to share 5.2% of employment growth in New England from 1965 to 1980. Employment in this subregion is projected to grow 19.2% in that period. (See Figure 2 for map of the subregion).

a. General Profile

Connecticut 03, located in the southern central part of the state, includes the Mid-State, Connecticut River Estuary, and the South Central Connecticut Planning Regions, and the Labor Market Areas of New Haven, Meriden, and Middletown. (Connecticut 03 is different from Area E mainly because Connecticut 03 includes the Mid-State Planning Region and Area E does not.) The New Haven area is quite heavily industrialized, while the eastern part of Connecticut 03 is heavily forested and rather sparcely populated in comparison. New Haven Connecticut's third largest city, is linked to Hartford by I91 and to New London and Bridgeport by the Connecticut Turnpike, but except for a proposed highway from I91 and Middletown to Old Saybrook, the rest of the area is not now traversed by major highways.

b. Historical Analysis

Population. Connecticut 03 had 596,100 residents in 1965. This was 5.4% of the New England total, the fifth highest among the subregions throughout the region and third highest among the five Connecticut subregions. Between 1960 and 1965 the population of Connecticut 03 rose by 10.4%, slightly less than double the New England rate. Employment in the subregion rose at a slightly higher rate -- at 11.0% -- in the same five-year period.

Employment by Major Division. Connecticut 03 provided 196,580 jobs in 1966, fifth highest among the 29 subregions in the New England region. It accounted for about 6% of New England employment in that year, and disproportionately large shares of New England service and utilities employment -- 9% and 8%, respectively.

In 1966 services accounted for more than 18% of total employment in Connecticut 03 compared to the corresponding figure of 12% for New England. The subregion also had relatively more employment in the utilities group and construction than did the New England region, but to a lesser extent than in services. Manufacturing and trade were the subregion's dominant employers, accounting for about 43% and 21% of 1966 total employment in Connecticut 03 -- both components somewhat lower than the New England regional averages in the same categories.

Total employment in Connecticut 03 has grown at a pace slightly higher than the New England regional average -- 16% versus 12%. By 1964 manufacturing employment had dropped to 95% of its 1960 level in the subregion but spurted in the next two years to register a net gain of almost 12% in the six-year period compared to the New England region's 7% gain. Subregion employment in trade activities also increased at a rate significantly higher than the New England average, but the subregion's overall rate of increase was held down by the growth performance of services employment which grew by 21% compared to more than 31% in the overall region. As in the case of the performance of finance, insurance and real estate in the Hartford subregion, this statistical result is a reflection of the historical concentration of services in Connecticut 03. However, on balance, the basic employment structure of Connecticut 03 was fairly stable until 1966.

Manufacturing Employment. In 1966 the largest employers within the manufacturing division in Connecticut 03 were primary metals, fabricated metals and transportation equipment (33.1%) and the "miscellaneous and other" group (16.1%). Throughout New England these two groups made up about 25% of total manufacturing employment. In the subregion, the remaining manufacturing employment was quite evenly distributed among six categories, each accounting for between 6% and 10% of total manufacturing employment. Connecticut 03 itself had 5.4% of New England regional manufacturing employment but disproportionately large shares of regional employment in ordnance (19.3%), miscellaneous and other (18.4%), and metals-transportation equipment (8.8%).

Between 1960 and 1966 metals-transportation equipment employment in the subregion increased at a rate slightly under the New England regionwide pace, but its employment in the miscellaneous and other category grew relatively five times as fast as it did in the New England region as a whole. The fastest growing mnaufacturing employers in the subregion in the six-year period were stone, clay and glass (41.9% gain) ordnance (41.1% gain) and printing and publishing (23.3% gain). Absolute declines were experienced by food; lumber, furniture and paper products; and chemicals, rubber and miscellaneous plastics. On balance, the structure of manufacturing employment in Connecticut 03 did not change significantly between 1960 and 1966.

Wages and Salaries and Earnings. In 1966 wage payments in Connecticut 03 totalled $1,312,8 million. This was about 7% of the total New England wage bill. Per capita earnings in the subregion averaged $6,678 or almost 15% above the New England average. Construction, the utilities group, manufacturing, and finance, insurance and real estate, in that order, had per capita earnings above the subregion average. Moreover, all per capita earnings figures in Connecticut 03 were at least 10% above the equivalent figures for the New England region. Between 1960 and 1966 earnings in construction and manufacturing grew more rapidly in the subregion than in the region, but in all other major employment divisions the regional percentage increases in earnings were slightly higher.

c. Projective Analysis

Population. ADL projects the population of Connecticut 03 to increase from 596,100 to 745,500 in the 1965-80 study period. The projected percentage gain will be about 25% as compared to 26% for New England. The projected absolute gain of 149,400 represents 5.2% of that for New England, a percentage that is equivalent to the subregion's share of the region's projected employment increase in the same period.

Employment by Major Division. Our projections indicate a growth in total employment of about 19% for Connecticut 03 between 1965 and 1980 -- a rate about two-thirds that expected for New England. Subregional employment is expected to grow in manufacturing and trade at moderately above the corresponding New England regional rates. Employment changes in the utilities group and in finance, insurance and real estate are expected to be quite similar for both Connecticut 03 and the overall region, but subregional employment in construction and services is expected to grow at well below the corresponding regional rates. Except for a relatively high proportion of total employment in services, the employment structure of Connecticut 03 is expected to closely approximate that of the region in 1980.

Manufacturing Employment. Our projections indicate that of the three largest manufacturing employers in this subregion, the largest -- metals-transportation equipment -- will grow most rapidly during the projection period, at a rate slightly above the corresponding New England regional rate. Subregional employment in the chemicals group is expected to grow at a rate lower than the corresponding regional rate, while an absolute decline in subregional employment is expected for the third largest manufacturing employer in Connecticut 03 -- miscellaneous, including ordnance. In general, the projections indicate that industy-by-industry this subregion will not fare as well as New England as a whole in terms of manufacturing employment growth. On balance, it is expected that metals-transportation equipment will continue to remain by far the largest single manufacturing employer in Connecticut 03, to a much greater extent than in the region as a whole, but to a lesser extent than in Connecticut 01 or 02. The balance of manufacturing employment in this subregion will continue to be well distributed among the other manufacturing industries.

Wages and Salaries. We have projected total wages and salaries in Connecticut 03 to rise from $1,206.5 million to $2,236.7 million between 1965 and 1980 (in constant 1965 dollars). This reflects the previously discussed projected gain in employment, together with a projected increase of 29.5% in average productivity per worker. The subregion's wage and salary total is expected to grow by about 85% -- the same as the New England region's total -- in the projection period.

B. HIGHER EDUCATION AVAILABLE IN AREA E

Institutions of higher education are located in Area E as shown on Figure 1. Program offerings of the institutions are shown on the foldout, Figure 7.

Public Institutions

South Central Community College (New Haven)

Southern Connecticut State College (New Haven)

[The planned New Haven Area State Technical College (New Haven)]

Independent Institutions

Albertus Magnus College (New Haven) (1)

New Haven College (West Haven) (8)

Quinnipiac College (Hamden) (10)

Yale University (New Haven) (19)

Two-year general studies programs in the arts and sciences leading to an Associate degree are offered by South Central Community College, Southern Connecticut State College, New Haven College, and Quinnipiac College. South Central Community College also offers programs in child care, public service aides, food preparation, and several programs in business, accounting, and secretarial studies. New Haven College also offers two-year Associate degree programs in general biology, commercial and graphic arts, journalism, business, accounting, general management, law enforcement administration, and engineering -- including general, electrical and electronics, industrial and management, mechanical, and metallurgical. Quinnipiac offers two-year Associate degree programs in business, accounting, marketing, secretarial studies, real estate and insurance, computer science, inhalation therapy, cytotechnology, radiologic technology, and cardiopulmonary technology.

Albertus Magnus College, a women's college, offers the Bachelor of Arts degree in liberal arts. New Haven College offers baccalaureate degrees in business administration, engineering, English and journalism, physical sciences and mathematics, and the social sciences. Quinnipiac offers baccalaureate degree programs in arts and science, general biology, business administration, English and writing, foreign language, mathematics, computer science, medical technology, psychology, and the social sciences.

Southern Connecticut State College offers programs in professional education (early childhood education, elementary education, secondary education, art education, health, physical education and recreation, and special education) leading to Bachelor of Science and Master of Science degrees. The College offers B.S. and M.S. programs in library science. A B.A. program is offered in social welfare and a B.S. program in nursing. The College offers a number of majors leading to baccalaureate degrees in the liberal arts and sciences. It also offers a broad array of programs leading to M.A. or M.S. degrees in the arts and sciences including newly approved M.A. programs in English, French, Spanish, history, and psychology. A graduate program in administration and supervision has recently been established and a Sixth-year diploma program provides offerings in several specialized areas of education: special education, educational psychology, and speech and hearing therapy.

Yale University offers baccalaureate degree programs in the arts and sciences, fine and applied arts, business and commerce, and engineering. It offers a Master of Arts degree in teaching. In the Yale University Graduate School, Master's and Doctoral degree programs are offered in the arts and sciences, administrative sciences, engineering, and international studies. Its School of Medicine offers Master's and Doctoral degree programs in medicine and public health. Its Divinity School offers graduate work in theology and religious education. Its Law School offers programs leading to LL.B., LL.M., J.S.D., and D.C.L. degrees. Its School of Art and Architecture offers Master's degree programs in art, architecture, urban studies, city planning, and graphic arts. The School of Music offers both Master's and Doctoral degree programs. The School of Forestry and the School of Nursing both offer Master's degree programs, and the School of Drama offers both Master's and Doctoral programs in theatre arts.

The 1967 Legislature authorized a new State Technical College for the New Haven Area, but no construction has been started. A good deal of planning has been done for the new college, but site selection problems have caused considerable delay. Because of this delay it is anticipated that, with construction costs rising in the neighborhood of 10-15% per year, the cost originally envisioned for the new institution will be far lower than actual costs unless the facility is redesigned to be smaller and less expensive.

FIGURE 7 AREA

	AGRICULTURE	FORESTRY	ARCHITECTURE	ARTS AND SCIENCES	ENGLISH, WRITING, JOURNALISM	FOREIGN LANGUAGES	FINE ARTS	GRAPHIC ARTS	AMERICAN STUDIES	INTERNATIONAL STUDIES	RELIGION OR THEOLOGY	BUSINESS ADMINISTRATION	BUSINESS, SECRETARIAL AND DATA PROCESSING	LAW	EDUCATION	PHYSICAL EDUCATION	GENERAL EDUCATION	GUIDANCE AND COUNSELING	PSYCHOLOGICAL EXAMINER	LIBRARY SCIENCE	READING CONSULTANT	HOME ECONOMICS	DENTISTRY	PRE-DENTAL	DENTAL OFFICE ASSISTANT	PHARMACY	NURSING
STATE COLLEGE																											
SOUTHERN CONNECTICUT STATE COLLEGE				BM	BM	BM	B								SY BM		A		S-Y		S4						B
INDEPENDENT INSTITUTIONS																											
ALBERTUS MAGNUS COLLEGE				B	B	B	B						B		BM												
NEW HAVEN COLLEGE				A TP	AB			A				AB	AB				A										
QUINNIPIAC COLLEGE				AB		B						AB	AB	I I	M		A										A
YALE UNIVERSITY		MD	B M D	B M D	B M D	B M D	B M D	M	B M	B M	B M D	B M D		B M D	MD											D	M
COMMUNITY COLLEGE																											
SOUTH CENTRAL COMMUNITY COLLEGE				A TP								A	A				A										

KEY:

A – Associate/Certificate		**D** – Doctorate		**S** – Semesters	
B – Baccalaureate		**SY** – Sixth-Year		**X** – One-Year Program	
M – Master's		**TP** – Transfer Program			

URE 7 AREA E

DENTISTRY	PRE DENTAL	DENTAL OFFICE ASSISTANT	PHARMACY	NURSING	PHYSICAL THERAPY	OCCUPATIONAL THERAPY	MEDICINE	PRE-MEDICAL	MEDICAL TECHNOLOGY	MEDICAL AND BIOLOGICAL LABORATORY TECHNICIANS	INHALATION THERAPIST	CYTOTECHNOLOGY	RADIOLOGICAL TECHNOLOGY	SURGICAL TECHNICIAN	CARDIOLOGICAL SCIENCES	BIOLOGICAL SCIENCES	NATURAL SCIENCES (PHYSICAL, LIFE, MATHEMATICAL)	SOCIAL SCIENCES	POLITICAL SCIENCE	PUBLIC AND SOCIAL SERVICE (Urban Studies, Law Enforcement)	FIRE TECHNOLOGY AND ADMINISTRATION	CHILD CARE	MENTAL HEALTH WORKER	ENGINEERING	CHEMICAL ENGINEERING TECHNOLOGY	CIVIL ENGINEERING TECHNOLOGY	DATA PROCESSING TECHNOLOGY	ELECTRICAL ENGINEERING TECHNOLOGY	MANUFACTURING ENGINEERING TECHNOLOGY	MECHANICAL ENGINEERING TECHNOLOGY	METALLURGICAL TECHNOLOGY	NUCLEAR ENGINEERING TECHNOLOGY	PHYSICAL SCIENCE TECHNOLOGY	INDUSTRIAL MANAGEMENT AND TECHNOLOGY	ENGINEERING AIDES	INDUSTRIAL-TECHNICAL
				B												BM	BM	BM		M																
																B	B	B						B												
																A	B	B		AB				A B												
				A	B	B			B		A	A	A		A	B	B	B																		
			D	M			D									B M D	B M D	B M D		M				B M D												
																	A					A														

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C. UNMET NEEDS IN AREA E

The 1967 study of Health Service Occupations determined that approximately 7,600 health service workers were employed at the time in Area E (a combination of the New Haven labor market area, the southern two thirds of the Meriden labor market area, and the southern half of the Middletown labor market area. Labor market areas were the geographical units studied and reported for the September, 1967, report). At that time about 740 job vacancies existed in the health service occupations. For the period 1967-1971 the study forecast a need for approximately an additional 6,000 health services personnel. About a third of that additional requirement represented new jobs. For the nine-year period, 1967-1976, the need was forecast for a total of about 11,300 additional health services personnel in Area E.

The 740 health services job vacancies in Area E in 1967 were mainly in the following occupations: nurses (365), nurses aides (130), technicians (50), and psychiatric aides (25). Among the forecast needs in Area E for additional health services personnel by 1976, the greatest needs are viewed as nurses (4,360), nurses aides (2,300), technicians (750), secretary-receptionists (750), psychiatric aides (470), and mental retardation aides (190).

South Central Community College has plans underway to establish programs to train nurses, X-ray technicians, mental health workers, and other health care paraprofessionals. But these programs will need to be quite extensive if they are to meet present and emerging needs.

A substantial need for technicians in industry in Area E is forecast. The 1970 study, The Need for Technicians in Connecticut, found that, as of June that year, 1,806 persons were employed as technicians in Area E. At that time 75 job vacancies existed in the area. The study forecast that by 1975, 589 new technician jobs would be established in Area E and another 547 technicians would be needed as replacements. Thus, the total additional need for technicians by 1975 in the area surrounding New Haven is projected at 1,211.

June, 1970, technician employment in Area E was comprised of: electronic (644), chemical (311), mechanical-tool (285), industrial production-manufacturing (147), and materials-metallurgical (122). Vacancies at the time were primarily in: electronic (16), electrical (12), and architectural and building construction (11). The total additional technician needs in the area by 1975 are projected mainly for electronic technicians (318), mechanical-tool technicians (237), chemical technicians (180), industrial production-manufacturing technicians (122), and electrical technicians (111). Programs now extant will not be able to meet these projected manpower needs.

The New Haven region, like the Bridgeport region, contains much substandard housing. The shortage and low quality of housing contributes to the deterioration of the core cities and to the migration to the suburbs of those who can afford it. Consequently, inner city populations show increasing proportions of low income or even poverty-level families and heavy concentrations of racial minorities. Social and cultural amenities for core city residents are few and thus the quality of life in aging cities deteriorates.

Needs exist in such urban centers for human resources to help upgrade the quality of life. Improved education systems and programs are required as is equal opportunity for access to such improved programs. The delivery of effective health services to all at reasonable personal costs is a challenging but high priority goal. Transportation systems must be redesigned and improved. Air, water, and noise pollution must be reduced. Governmental services must become less remote, more humane, and more responsive. Urban development, better city planning, and new town designs are needed. Urbanologists or multi-disciplinary "urban generalists", city planners, architects, public health professionals and paraprofessionals, engineers and technicians, political scientists, public administrators, economists and other social scientists are all needed to help mobilize and guide efforts to rebuild our cities as desirable places in which to live and work.

Institutions of higher education in Area E offer a number of two-year programs addressing specific developmental needs -- social, cultural, educational, and economic -- of the area. However, there is a lack of joint planning and interinstitutional cooperation in optimizing the use of available resources in the delivery of a wider range of offerings to students which are specifically attuned to emerging employment opportunities. The situation is even worse with respect to four-year programs and the establishment of effective joint planning and interinstitutional cooperation to meet emerging needs of the Greater New Haven area. Some exploratory efforts toward inter-institutional cooperation have been launched but most of those efforts have included just the independent institutions and they have not produced significant results (See Chapter VI of the companion study, An Assessment and Projection of the Resources and Needs of Independent Higher Education in Connecticut, a report to the Commission for Higher Education by Arthur D. Little, Inc., March, 1971.).

CHAPTER X

STUDY OF AREA F -- (THE SOUTHWESTERN, GREATER BRIDGEPORT, AND VALLEY PLANNING REGIONS)

A. SOCIOECONOMIC FACTORS

1. Data from State and Planning Regions Sources

Population in Area F increased about 20% from June, 1959, to June, 1969, while the labor force increased 21.1% over the same period (See Table 17). Population density in this area is far above the state average. Per capita retail sales is far above the state average in the Southwestern Connecticut Planning Region, but it is below average in the Greater Bridgeport and the Valley Planning Regions.

In December, 1969, 43% of all nonagricultural employees in Area F worked in manufacturing industries (See Table 24). This was a 3.1% decrease from December, 1965. In the manufacturing sector the greatest employment growth over the four-year period was in the following categories: Instruments -- 1.170 new jobs; Transportation equipment -- 1,110 new jobs; Printing and Publishing -- 1,060 new jobs; and Chemicals -- 960 new jobs. Net declines in employment over the four years were registered in the following categories: Textiles and apparel; Rubber and miscellaneous plastics; Primary metals; Leather; and Electrical equipment.

The employment categories accounting for most of the employment growth in the nonmanufacturing sector of Area F in the 1965-1969 period were: Service -- 8,300 new jobs (expanding from 13.6% of nonagricultural employment in the state to 15.3%); Trade -- 8,250 new jobs, mainly in retail, (from 19.6% to 20.6%); and Government -- 4,020 new jobs (expanding from 9.1% to 9.6%). Employment in Finance, Insurance and Real Estate increased by 1,630 in the four-year period. The Transportation-including railroads-category and Communications and Utilities maintained the same proportion of state employment during the period. The number of jobs in Construction increased slightly but the category declined as a proportion of total employment.

In 1960 Area F employed a larger proportion of personnel in the categories of "professional and technical" and "managers, officials and proprietors" than any of the other five areas. Area F also employed in 1960 a higher proportion of "sales" personnel than was true for the state as a whole. It was below the statewide average in the proportion of personnel employed in categories of "operatives," "clerical," "craftsmen and foremen," and "service (ex-household)."

Unemployment as of mid-September, 1970, in the labor market areas comprising Area F was as follows: Ansonia -- 8.2% of the labor force (770 men and 630 women), but job openings existed for auto mechanics and skilled machinists and related jobs; Bridgeport -- 6.8% (6,900 men and 5,300 women); Norwalk -- 4.9% (1,700 men and 1,000 women); and Stamford -- 4.0% (2,500 men and 1,500 women).

2. Information from ADL's 1968 Study of the New England Economy

Connecticut Subregion 05 is forecast to share 9.8% of employment growth in New England from 1965 to 1980. Employment in this subregion is projected to grow 26.9% in that period. The map indicating the boundaries of Connecticut 05 is shown as Figure 2.

a. General Profile

Located in the Southwestern corner of the state, Connecticut 05 incorporates the Planning Regions of Housatonic Valley, Valley, Greater Bridgeport, and Southwestern, and the Labor Market Areas of Bridgeport, Norwalk, and Stamford, and most of Danbury and Ansonia. (Connecticut 05 thus differs from Area F in that the Housatonic Valley Planning region is included in the subregion but not in Area F.) With a large part of its area within easy commuting distance of New York City, this subregion is highly residential, providing many bedroom communities for New York.

Industry in the subregion centers around Bridgeport, Connecticut's second largest city, and along the coastal towns of Norwalk and Stamford.

Linked to New York City by both the Connecticut Turnpike and the Merritt Parkway, the coastal cities and their suburbs have ready access to each other as well as to New Haven and Hartford by the Wilbur Cross Parkway and I91. Although the northwestern part of this subregion is bisected by I84, which ties it to the Hudson River Valley and Waterbury, the rest of the subregion is serviced mainly by smaller roads.

b. Historical Analysis

Population. In 1965 Connecticut 05 had 784,620 residents. This was about 7.0% of the New England total, the fourth highest among the 29 subregions and second highest among the five subregions in Connecticut. Between 1960 and 1965 the population of Connecticut 05 grew by 11.5% or about double the New England regional rate of growth. Since 1965 the population of Connecticut 05 has continued to grow; by 1967 the net increase was 17.1% over the 1960 level.

Employment by Major Division. Connecticut 05 provided 277,380 jobs in 1966, the third highest total among the 29 subregions. This represented more than 8% of New England employment, including almost 11% of New England regional services employment and more than 9% of regional manufacturing employment. The 141,000 manufacturing jobs was the third highest manufacturing total in the New England region and the 43,800 service jobs was the second highest services total. Both statistics reflect the coexistence in the subregion of towns which are heavily industrialized and those which are satellite bedroom communities oriented toward New York City.

Not surprisingly, in 1966 manufacturing and services accounted for greater proportions of employment in Connecticut 05 than in New England as a whole -- 51% and almost 16% respectively. This diversion from the regional employment pattern is reflected in lower-than-average proportions of total subregional employment accounted for by each of the remaining employment divisions.

Total employment in Connecticut 05 grew by almost 19% between 1960 and 1966 as compared to the New England region's 12% gain. Manufacturing employment rose by about 14%, this gain in turn representing more than 17% of the total regional manufacturing increase in the six-year period. Services employment in Connecticut 05 rose by almost 33% in the period, in turn accounting for about 12% of the New England gain. With the exception of agriculture, mining and construction, employment growth in the other major divisions in Connecticut 05 exceeded the regional average percentage gains by division for 1960 -1966; employment in construction in the subregion actually dropped by about 7% by 1964, but recovered to a level slightly higher than that of 1960 two years later. On balance, the employment structure of Connecticut 05 has been shifting very slowly in recent years in favor of the non-manufacturing activities, but as a result of buildups in these activities rather than any noticeable slowdown in the growth of manufacturing.

Manufacturing Employment. In 1966 the largest shares of manufacturing employment in Connecticut 05 belonged to primary metals, fabricated metals and transportation equipment (27.4%), followed by electrical machinery (18.4%), machinery-except-electrical (15.1%), and "miscellaneous and other" (11.6%). The first three were also very important throughout New England but to a significantly less degree. Textiles, apparel and leather goods employment accounted for only 6.1% of the subregion's total. Connecticut 05 itself accounted for 9.2% of all manufacturing employment in New England, but disproportionately large portions of total New England regional employment in miscellaneous and other, ordnance, instruments, metals-transportation equipment, machinery-except-electrical, and electrical machinery.

Between 1960 and 1966 the fastest growing manufacturing sectors in the subregion were: ordnance (45.2% gain), and stone, clay and glass (41.3% gain). Employment in electrical machinery and miscellaneous and other grew faster in Connecticut 05 than in the New England region, but employment in metals-transportation equipment and machinery-except-electrical grew more slowly in this subregion than in New England. Textiles, apparel and leather goods employment and printing and publishing employment in the subregion declined absolutely in the six-year period. In recent years the relative strengths of the different manufacturing sectors in Connecticut 05 have not changed significantly.

Wages and Salaries and Earnings. In 1966 wage payments in Connecticut 05 totalled $1,853.3 million. This was about 10% of the total New England wage bill. Per capita earnings in the subregion averaged $6,682 or almost 15% above the New England regional average. Construction, the utilities group, manufacturing, and finance, insurance and real estate, in that order, had per capita earnings above the subregion average. Moreover, all per capita earnings figures in Connecticut 05 were at least 10% above the equivalent figures for the region. Between 1960 and 1966 earnings in construction and manufacturing grew more rapidly in the subregion than in the region, but in all other major employment divisions the regional percentage increases in earnings were slightly higher.

c. Projective Analysis

Population. ADL projects the population of Connecticut 05 to increase from 784,620 to 1,066,100 in the 1965-80 study period. The projected percentage gain will be about 36% as compared to 26% for New England. The projected absolute gain of 281,500 represents 9.8% of that for New England, a percentage that is equivalent to the subregion's share of New England's projected employment increase in the same period.

Employment. Our projections indicate a growth in total employment of about 27% for Connecticut 05 between 1965 and 1980 -- a rate slightly below that projected for New England. The subregion will remain the third largest employer in New England. Subregional employment in manufacturing, trade, and finance, insurance and real estate is expected to grow at well above the corresponding regional rates. Services employment is expected to increase somewhat more slowly in this subregion than in New England as a whole. An absolute decline is anticipated for construction employment (contrary to the regional trend), while it is expected that Connecticut 05 will experience a decline in employment in the utilities group of a relatively greater magnitude than that expected for the region. By 1980 the shares of services, trade, and finance, insurance and real estate in total subregional employment will have increased significantly, although the share of manufacturing employment in the total is not expected to decline as rapidly in Connecticut 05 as in the overall region.

Manufacturing Employment. Our projections indicate that the three largest manufacturing employers in this subregion -- metals, transportation equipment, machinery-except-electrical, and electrical machinery -- will gain employment steadily through the projection period, but in each case at rates below the corresponding regional rates.

Above average growth is anticipated for other but smaller components of the subregional manufacturing employment total: the lumber group, the chemicals group, stone, clay and glass. Our projections also indicate a gain in employment for the miscellaneous-including-ordnance group, contrary to the regionwide trend toward decline. On balance, the structure of manufacturing employment in Connecticut 05 is not expected to change significantly, with the three largest manufacturing employers expected to continue to account for moderately greater shares of manufacturing employment in the subregion than in New England as a whole.

Wages and Salaries. We have projected total wages and salaries in Connecticut 05 to rise from $1,676.4 million to $3,383.0 million between 1965 and 1980 (in constant dollars). This reflects the previously discussed projected gain in employment, together with a projected increase of 28.8% in average productivity per worker. The subregion's wage and salary total is expected to grow relatively more than the New England region's total in the projection period -- 102% versus 85% -- reflecting faster subregional growth in employment, which outweighs slower subregional growth in average productivity. The mix of employment in Connecticut 05 already tends to favor the higher wage industries.

B. HIGHER EDUCATION AVAILABLE IN AREA F

The following institutions of higher education are located in Area F as shown on Figure 1. Program offerings of each institution are indicated on Figure 8.

Public Institutions

Norwalk Community College (Norwalk)

Housatonic Community College (Stratford)

Norwalk State Technical College (Norwalk)

The Stamford Branch of The University of Connecticut

Independent Institutions

Bridgeport Engineering Institute (Bridgeport) (3)

Fairfield University (Fairfield) (5)

Sacred Heart University (Bridgeport) (12)

University of Bridgeport (Bridgeport) (16)

Silvermine College of Art (New Canaan) (20)

Norwalk Community College, Housatonic Community College, Sacred Heart University, Bridgeport Engineering Institute, and the University of Bridgeport offer Associate degree and two-year transfer programs in the arts and sciences. Norwalk Community College, Housatonic Community College, Sacred Heart University, and the University of Bridgeport offer Associate degree (and some certificate) programs in business, data processing, and secretarial studies. Associate degree programs in general education are offered by Norwalk Community College, Housatonic Community College, and the University of Bridgeport. In two-year engineering curricula Bridgeport Engineering Institute offers three programs, Housatonic offers one, and the University of Bridgeport offers one. In health sciences the University of Bridgeport offers five two-year programs and three four-year programs; Housatonic now offers one two-year program; and Norwalk Community College offers two two-year programs. Both Housatonic and Norwalk offer two-year programs in the public and social service field. The University of Bridgeport and the Silvermine College of Art offer Associate degree programs in fine arts and the Silvermine College of Art offers Associate degree programs in graphic arts.

The Norwalk State Technical College offers nine two-year programs leading to the Associate degree in Applied Science: chemical engineering technology, data processing technology, electrical engineering technology, electro-mechanical engineering technology, fire technology and administration, mechanical engineering technology, materials engineering technology, and manufacturing engineering technology. It also offers a one-year pre-technical program and a one-year certificate program in architectural and building construction. In addition, it operates continuing education Extension Centers at Bridgeport, Danbury, and Stamford.

The Stamford Branch of The University of Connecticut provides the following undergraduate offerings for transfer credit:

Arts and Sciences - 4 semesters

Agricultures - 3 semesters

Business Administration - 4 semesters

Education - 4 semesters in major teaching field

Engineering - 4 semesters

Fine Arts - 1 or 2 semesters

Home Economics - 3 semesters

Nursing - 2 semesters

Pharmacy - 2 semesters

Physical Education - 1 semester

Physical Therapy - 3 semesters

FIGURE 8 A

	AGRICULTURE	FORESTRY	ARCHITECTURE	ARTS AND SCIENCES	ENGLISH,WRITING,JOURNALISM	FOREIGN LANGUAGES	FINE ARTS	GRAPHIC ARTS	AMERICAN STUDIES	INTERNATIONAL STUDIES	RELIGION OR THEOLOGY	BUSINESS ADMINISTRATION	BUSINESS, SECRETARIAL AND DATA PROCESSING	LAW	EDUCATION	PHYSICAL EDUCATION	GENERAL EDUCATION	GUIDANCE AND COUNSELING	PSYCHOLOGICAL EXAMINER	LIBRARY SCIENCE	READING CONSULTANT	HOME ECONOMICS	DENTISTRY	PRE-DENTAL	DENTAL OFFICE ASSISTANT	PHARMACY	NURSING
INDEPENDENT INSTITUTIONS FAIRFIELD UNIVERSITY	B			B M	B	B			M		B	B			B M												B
SACRED HEART UNIVERSITY				A B TP	B							A B			B												
UNIVERSITY OF BRIDGEPORT				A TP B M		B M	A B	B			B	B M	A B		B M SY	B M	A	M SY				A B			A		A B
SILVERMINE COLLEGE OF ART							A	A																			
THE UNIVERSITY OF CONNECTICUT STAMFORD BRANCH	TP 3S			TP 4S			TP 1-2S					TP 4S			TP 4S	TP 4S						TP 3S				TP 2S	TP 2S
TECHNICAL COLLEGE NORWALK STATE TECHNICAL COLLEGE																											
COMMUNITY COLLEGES NORWALK COMMUNITY COLLEGE				A TP								A	A				A										A
HOUSATONIC COMMUNITY COLLEGE				A TP			A					A	A				A										

KEY:

A – Associate/Certificate	D – Doctorate	S – Semesters
B – Baccalaureate	SY – Sixth-Year	X – One-Year Program
M – Master's	TP – Transfer Program	C – Co-op Program

FIGURE 8 AREA F

HOME ECONOMICS	DENTISTRY	PRE-DENTAL	DENTAL OFFICE ASSISTANT	PHARMACY	NURSING	PHYSICAL THERAPY	OCCUPATIONAL THERAPY	MEDICINE	PRE-MEDICAL	MEDICAL TECHNOLOGY	MEDICAL AND BIOLOGICAL LABORATORY TECHNICIANS	INHALATION THERAPIST	CYTOTECHNOLOGY	RADIOLOGICAL TECHNOLOGY	SURGICAL TECHNICIAN	CARDIOLOGICAL SCIENCES	BIOLOGICAL SCIENCES	NATURAL SCIENCES (PHYSICAL, LIFE, MATHEMATICAL)	SOCIAL SCIENCES	POLITICAL SCIENCE	PUBLIC AND SOCIAL SERVICE (Urban Studies, Law Enforcement)	FIRE TECHNOLOGY AND ADMINISTRATION	CHILD CARE	MENTAL HEALTH WORKER	ENGINEERING	CHEMICAL ENGINEERING TECHNOLOGY	CIVIL ENGINEERING TECHNOLOGY	DATA PROCESSING TECHNOLOGY	ELECTRICAL ENGINEERING TECHNOLOGY	MANUFACTURING ENGINEERING TECHNOLOGY	MECHANICAL ENGINEERING TECHNOLOGY	METALLURGICAL TECHNOLOGY	NUCLEAR ENGINEERING TECHNOLOGY	PHYSICAL SCIENCE TECHNOLOGY	INDUSTRIAL MANAGEMENT AND TECHNOLOGY	ENGINEERING AIDES
					B												B	B	B						C											
																	B	B	B																	
A B			A		A B					B	A						B M	B M	B M						B M						A			A		
P S				TP 2S	TP 2S	TP 3S																			TP 4S											
																						A						A	A	A	A	A			A	
					A							A									A															
											A										A															

In addition, certificate courses and programs to promote the vocational and educational competence of persons employed in business, education, and the professions are offered in the Branch on demand. Advanced or graduate courses can also be provided to meet significant needs. An evening MBA program now offered is very popular.

Fairfield University, through its College of Arts and Sciences for men, offers baccalaureate degree programs in arts, sciences, education, and business. Its coeducational Graduate School of Education offers the Master's degree and Certificate of Advanced Study for the Sixth-Year Program in Education. It also offers Master's degree programs in communication and social sciences. The University of Bridgeport offers baccalaureate degree programs in arts and sciences, education, business and commerce, engineering, and fine arts. It offers Master's degree programs in education (plus several Sixth-Year Diploma programs in education), physical education, the arts and sciences, business administration, mechanical engineering, applied mechanics, and electrical engineering. Sacred Heart University offers baccalaureate degree programs in education, business, accounting, and in the arts and sciences (including biological and social sciences); and it offers two-year programs in the humanities, social sciences, business, and accounting.

C. UNMET NEEDS IN AREA F

As in the urban core areas of New Haven in Area E and Hartford in Area B, the Bridgeport area is in great need of development and renewal. Urbanologists, "urban generalists", city planners, transportation specialists, community and social workers, fire and protection technologists, housing developers, environmental specialists, and public health personnel are all needed in the massive developmental effort required along the "corridor" and particularly in and surrounding Bridgeport. (A more detailed description of developmental needs in the Greater Bridgeport area is to be found in the study [particularly the appendix] by the Academy for Academic Development, Possible Areas for Public Aid for the University of Bridgeport, September, 1970.) The Higher Education Center for Urban Studies (HECUS) was established in Area F to provide a vehicle for improved joint planning and interinstitutional cooperation in delivering programs and services specifically designed to help cope with and resolve urban problems. Interviews with participating members suggest that few if any intended benefits have been forthcoming.

Area F plus the greater Danbury area had job vacancies for 117 technicians as of June, 1970, according to the study, The Need for Technicians in Connecticut. In the five-year period, 1970 to 1975, needs were forecast for an additional 2,655 technicians in that geographical area. The number estimated to be required in this area is second only to the greater Hartford area. Of the 2,655 total, 1,224 represent new technician jobs.

By far the largest number of technicians employed in the southwest Connecticut area are electronic technicians (1,509 in 1970). Total additional needs in the 1970-1975 period by occupational specialty are concentrated largely in: electronic technicians (1,109), mechanical-tool technicians (353), aeronautical and aerospace technicians (297), chemical technicians (232), electrical technicians (213), industrial production-manufacturing technicians (141), and data processing technicians (96).

A number of corporate offices have moved into southwestern Connecticut from New York City: American Can, Avco, Bangor Punta, Howmet, Microdet, Olin, Xerox, Yardney Electric, Combustion Engineering, and RCA have moved to date. More are expected over the next ten years. This will significantly increase the demand for managerial, supervisory, and clerical personnel in the area, and implies that the colleges in the area should be prepared for an increase in enrollment in secretarial, business, technical, supervisory and management programs. In addition, industrial chemists, tool and die workers, skilled draftsmen and carpenters, automobile mechanics, and machinists will also be needed. In the future there will be increasing need for secretarial and sales training.

This area of the state employs the largest percentage of workers in the printing and publishing industry. Needs are especially great in bindery and composing skills, in lithographic preparation and in press operations.

The Greater Bridgeport Planning Commission indicated an increasing need for medical personnel, therapists and technicians, as well as trained personnel to deal with urban and social problems, such as those mentioned above.

The 1967 manpower study, Health Service Occupations, found 941 vacancies in those occupations in Area F in 1967. The study forecast a need in the area for an additional 6,905 health service personnel in the 1967-1971 period, and for an additional 12,654 personnel in the nine-year period 1967 to 1976. Among the health service occupations, the greatest additional needs in Area F from 1967-1976 were found to be for: nurses (5,346), nurses aides (2,078), medical and dental secretaries and receptionists (1,177), dental hygienists and assistants (879), technicians of all kinds (707), mental retardation aides (110), psychiatric aides (86), and rehabilitation aides (83). By far the greatest number of these additional personnel are needed in the Bridgeport labor market area, with the number in the Stamford labor market area being next greatest, and the number of additional personnel needed in the Norwalk labor market area being least great.

Studies of local manpower needs by the Norwalk Community College have shown requirements for clerical workers, accounting and marketing personnel, general business administrators, police officers, nurses and other health service specialists, food administrators (for hotels, and motels), library technicians, and personnel trained to staff and operate day care centers.

Over the next couple of years Housatonic Community College plans to add programs for hospital administrative aides, law enforcement, child care, X-ray technicians, nursing home administrators, and mental health workers.

This heavily populated area has no public four-year institutions of higher education. But it contains four public two-year institutions: two community colleges, a technical college, and a university branch. Arrangements need to be made in the area for providing more upper division and graduate work to students who cannot presently afford the tuition charged by independent institutions in the area. We doubt that there is an immediate need to expand the university Branch at Stamford into a four-year college, and we further question the appropriateness of that particular site for expansion if and when it is determined that a new four-year public college in the southwest "corridor" is required.

An excellent and less expensive alternative would be to establish, through CHE initiative, an effective Higher Education Center in the southwest corridor involving two- and four-year institutions both public and independent. Such a consortium involving independent institutions could contract with the State to provide needed upper division and graduate programs, articulating them with lower division courses offered primarily by the public institutions. Coordinated by the CHE, this arrangement could provide a greater range of offerings to students which would be responsive to identified needs and at a cost lower than that required to establish a new or expanded public institution. The contract could provide for student tuition to contracted programs which would equal that at public institutions.

CHAPTER XI

A QUESTIONNAIRE SURVEY OF A SAMPLE OF HIGH SCHOOL SENIORS REGARDING POST-SECONDARY EDUCATION INTERESTS AND INTENTIONS

A. INTRODUCTION

One important part of assessing the higher educational needs of an area is a study of the post-high school plans, aspirations, interests, attitudes, preferences, and abilities of youth. Previous studies have shown that plans of high school seniors are sufficiently valid predictors of post-graduation activities to warrant careful attention. Many of the same influences and forces which affect the formulation of plans tend to be those which operate to influence their implementation and determine the extent to which a senior is likely to follow them. It is important to ascertain the extent to which an area contains youth who are interested in and probably can profit from various types of post-high school programs.

It is also important to identify the obstacles which may be associated with post-high school nonattendance and lack of motivation of talented youth to pursue higher levels of education. Assuming the characteristics of seniors in 1970-71 are similar to those who will be succeeding them in several consecutive years, conclusions based upon a study of current seniors can serve as a basis upon which to offer predictions for the future. On the assumption that responses from our sample of seniors approximate those which might have been received from all Connecticut seniors in each of the six geographical areas, generalizations can be made for those areas and for the state as a whole.

B. SURVEY SAMPLING AND ADMINISTRATION

The size of the sample of high school seniors in the state of Connecticut to be surveyed by questionnaire was set at 2,400. It was estimated that approximately 2,000 useable questionnaires would be derived from such a sampling. The sample of 2,400 was proportionately divided among the six geographical areas of the state which were defined by ADL for purposes of this study (See Figure 1). Using the 1969-70 Education Directory for Public School Systems, the number of high school seniors was determined for each of the six areas and for the state as a whole. Then on a straight percentaging basis, the sample of 2,400 was apportioned among the six geographical areas. The results of this process called for 14% of the sample to be drawn from Area A, 33% from Area B, 3% from Area C, 8% from Area D, 17% from Area E, and 25% from Area F.

The twenty cities and towns included in this survey were chosen on a judgmental basis to reflect approximately the mix of urban, suburban, and rural communities characteristic of each area. They were selected by the ADL team on the basis of experience gained during the earlier part of this study and in the course of our 1970 study to determine community college needs throughout the state. The twenty cities and towns selected in the six areas contained a total of thirty high schools, each of which was included in our sample. The number of questionnaires for each school was determined on the basis of the relative size of the high school senior populations in those schools (e.g., if there were two high schools in a community with 750 and 250 high school seniors respectively, then 75% of the questionnaires for that community went to the larger school and 25% to the seniors of the smaller school). Since the number of questionnaires required from each school usually was less than the total number of seniors in that school, it was necessary to randomly select the participants from each school's population of high school seniors. Randomization of selection was performed at each school by the counseling department, applying any of several techniques.

The coordination of the survey was accomplished by mail, telephone, and parcel post. The superintendent of schools in each of the selected communities was contacted and asked for permission to have the guidance department of the high school administer the questionnaires. In almost all cases the superintendents gave permission and supplied the names of people within the school systems to coordinate the survey (usually high school principals) and administer the questionnaires (usually guidance personnel). The questionnaires were then mailed to those persons in the respective communities. Each packet contained instructions for administering the survey, along with directions for returning the completed questionnaires to the Cambridge office of Arthur D. Little, Inc.

Actual returns from the various communities gave us an 81% completion rate. The largest part of the 19% nonreturned resulted from three schools (including one community) that did not return any completed questionnaires. Those schools that did return completed questionnaires to us achieved a completion rate of 98% useable questionnaires. A total of 1,944 questionnaires were analyzed by computer. The results are presented in the remainder of this chapter. The questionnaire is reproduced as Appendix B of this report.

C. MOBILITY AND NATURE OF STUDENT POPULATION

For future educational planning it is important to know whether the prospective student group is composed of persons who have been in the area for some length of time or whether short-term residency reflects a relatively mobile group. Length of time present seniors have resided in the respective areas reveal the relative stability-mobility condition. Seventy-one percent of the seniors had lived in their school district six or more years, or since junior high school; 15% had lived in their district three to five years and 5% did not reply to this question. The highest levels of population stability were found in the northeast (Area C) and west-northwest (Area A), and the greatest amount of immigration was found in the southwest (Area F) and south central (Area E) areas.

Whereas 46% of all seniors eventually plan to make their home in Connecticut, 45% plan to live elsewhere; 9% gave no response. Of those seniors giving a reason for planning to leave the state, 10% said they probably would move in order to get a particular kind of job probably not available in the state. This group was 5% of all seniors and 10% of those in Area D. Six percent of all seniors doubted if they could find a good job in the area where they live. Over a third of the seniors giving a reason for leaving (36%) wanted to live in another part of the country, and another 31% just wanted to travel. The rest (23%) would leave for family, health, or other reasons.

Of all respondents approximately 23% were living with someone other than both their parents while attending school. Eighteen percent were definitely from broken homes. This is a relatively high proportion of youth from homes broken by death, separation, or divorce. The highest incidence of broken homes was in the southwest (Area F) and the north-central (Area B) areas, while the lowest incidence was in the northeast (Area C) and the west-northwest (Area A) areas.

Most seniors responding to this questionnaire, 56%, were in a college preparatory high school program and 19% were in a commerce/business program. Seventeen percent were in a general program, and 7% were following a progarm in agriculture, homemaking, vocational or industrial arts, and programs such as combinations of the others.

About 83% of the seniors in the college preparatory curriculum had definite plans for attending college; slightly under 8% had plans that would "probably" include college, and slightly over 3% had no plans for further schooling. Six percent in the college preparatory programs were uncertain. The largest percent of seniors whose plans definitely or probably included further education were enrolled in a college preparatory course. The largest percent of those who were not sure or definitely had no plans for further education were enrolled in a general curriculum. The largest percent whose plans probably would not include further education were in a commercial or business curriculum.

Students were asked to which group they belonged by academic ranking. About 16% indicated they were in the top 10% of their class, 46% said they ranked in the top third, 44% said they were in the middle third, and 10% said they were in the lower third. Either the sample of seniors responding was biased in favor of the more academic-able students or the responses were not accurate. However, follow-up experience with other surveys of this type suggest that meaningful results are possible simply by interpreting such self-ratings as rank ordered groups instead of literally.

Responding seniors indicated that 15% of their fathers and 10% of their mothers were college graduates. About 12% of both parents had some type of post-secondary education less than college graduation. A fourth of the fathers and 35% of the mothers terminated their formal education with high school graduation. Thirty percent of the fathers and 28% of the mothers did not finish high school. Over half, 56%, of the high school seniors indicated one or both parents wanted them to continue in school after graduation and 30% reported parents as indifferent. Two percent, mostly girls, reported parents did not want them to attend more school.

Fourteen percent of all seniors indicated that their family frequently had difficulty making financial ends meet or that they sometimes had difficulty in getting necessities. Fifteen percent indicated their family's income provided necessities but not many luxuries, 44% said their families were comfortable but not well-to-do, and 16% judged that their families were well-to-do or wealthy.

D. EDUCATIONAL INTENTIONS OF SENIORS

All seniors were asked if their future plans included going to college, business school, or vocational school after high school graduation. Data summarizing the responses are presented in Table 10.

TABLE 10

Seniors' Plans for Post High-School Education by Percent

Plan For Attendance	Boys	Girls	Both
No	7%	11%	10%
Probably Not	2	2	2
Subtotal	9%	13%	12%
Yes	68%	61%	64%
Probably	10	10	9
Subtotal	78%	71%	73%
Not Sure	13%	16%	15%
Total			100%

An eighth of the seniors indicated future plans would probably not or definitely not include post-high school attendance; plans of 73% would probably or definitely include going on to school; and 15% were not sure. Actually, 26% were not sure about their plans for further schooling, 64% had definite plans for going on to school, and 10% would definitely not include further schooling in their plans. A slightly higher percent of girls (13%) than boys (9%) had plans that did not include further schooling. A higher percentage of girls (16%) than boys (13%) were unsure about their plans. Consequently, a somewhat larger percent of boys (78%) than girls (71%) expected to continue their education. Significantly larger percentages of boys in every area reported that both parents wanted them to continue their education than was true of girls.

In the experience of an ADL staff person who has obtained responses from over 300,000 high school seniors from 240 high schools to a similar question about plans, the percent (64) obtained in this study for seniors indicating "definite plans" for further schooling seems high. The typical pattern is for a smaller percent to indicate definite plans and for a larger percent to indicate uncertainty by indicating plans would "probably" include further education. Follow-up studies usually confirm that a relatively small percent of students indicating "probable plans" actually attend. The pattern of response is further questioned when from previous Connecticut studies it was found that based on 1970 population estimates only 14.25 full-time undergraduate residents were enrolled in public and private institutions per 1,000 residents. The current pattern of response is typical of that expected when the sample is biased to include a higher than appropriate proportion of the more academically-able students.

Caution should be used in making generalized forecasts or predictions for all Connecticut high school seniors based upon parameters derived from these data, especially as they relate to plans for college or selection of colleges. Percents may tend to be spuriously high.

E. PLACE OF EXPECTED POST-HIGH SCHOOL ATTENDANCE

Seniors whose future plans included going on beyond high school for more schooling were asked to indicate the college or school of their first choice. Responses are summarized in Table 17. Observation reveals that about an eighth of all seniors responding plan to attend a state college as their first choice, and nearly a tenth would choose The University of Connecticut main campus or one of its branches. Slightly over 8% would choose an occupational school such as a nursing, secretarial, trade, or technical school. A state technical college was the first choice of 6.4% of the male seniors. Public community colleges were the first choice of 4.4% of all seniors. About 18% of all seniors said they would prefer to attend an out-of-state institution.

TABLE 11

Percent of Seniors by Place of Expected School Attendance

School or College	School of First Choice			If Not First Choice, School Most Likely to Attend
	Boys	Girls	Both	
Connecticut State College	10.9	13.8	12.6	7.4
An Occupational School	3.9	11.4	8.3	3.8
University of Connecticut	11.5	8.7	9.9	4.9
Public Community College	4.5	4.4	4.4	4.3
University of Hartford	2.4	1.2	1.7	1.0
University of Bridgeport	1.6	1.5	1.5	.7
State Technical College	6.4	.9	3.1	1.0
Quinnipiac College	1.0	2.0	1.6	1.1
New Haven College	2.1	.8	1.3	.7
Yale University	1.6	.7	1.1	.3
Albertus Magnus, Hartford College for Women, Annhurst College, Post J.C., St. Joseph's, Fairfield, Silvermine, Sacred Heart. Mitchell	2.9	2.9	3.1	2.2
Wesleyan, Trinity, Connecticut College	3.4	.8	1.8	.9
Other Connecticut School	5.5	5.1	5.2	3.1
College or School Outside Connecticut	19.8	16.3	17.7	8.0
Don't Know	8.0	9.3	8.8	11.9
Will Not Go On	11.3	18.0	15.3	45.2*
No Response	3.3	2.2	2.6	3.5
Total	100.0	100.0	100.0	100.0

*Includes not only those who will not go on but those who will attend a school of first choice.

Of those seniors whose future plans definitely include further schooling, 55% expressed first choice of a state college, a public two-year college, or The University of Connecticut; 15% intend to go to an occupational school; 33% would go out of state; and 20% would distribute themselves among the independent institutions of the state.

Seniors who thought they might not attend the school or college of first choice were asked where they would most likely attend. Percent of responses are shown in the last column of Table 11. It can be seen that 7.4% of seniors who might not attend the school of first choice would most likely attend a state college, and 8% would most likely attend out of state. About 46% of all seniors believed they would most likely attend their first choice school, 30% were unsure, and 5% did not believe they would attend the school of first choice. Two percent did not respond to the question.

Seniors not expecting to attend the school of first choice were asked the reason. Slightly over a third (35%) believed they would not be accepted in the school of first choice, 7% had not been able to get a scholarship, 19% said they could not afford the school of first choice, 30% indicated other reasons, and 9% did not reply to the question.

About 41% of all seniors indicated the institution they would most likely attend was within commuting distance from home, 29% could not say, and 12% indicated the school was beyond commuting distance. Of the responding seniors with plans for continuing their schooling, about half lived within commuting distance of the school they would attend and 15% did not; the rest were uncertain.

First choices of colleges were analyzed against seniors' opinions as to whether they would attend the college of first choice. The highest incidence of response for selection of each college by whether the first choice was the one they would most likely attend revealed that the greatest uncertainty existed in reference to Albertus Magnus College, Hartford College for Women, Yale University, Connecticut College, Quinnipiac College, University of Bridgeport, Post Junior College, Wesleyan University, St. Joseph College, Trinity, Fairfield College, Silvermine College of Art, and Mitchell College.

An analysis of academic rank and first choice school revealed that the largest percent of seniors selecting Wesleyan University, Trinity College, and Yale University said they were in the top 10%. The modal ranking of seniors preferring schools outside Connecticut was the top 10% with the percent in the top third of their class being a close second. Seniors preferring The University of Connecticut ranked themselves in the top third of their class more than in other rankings. State college preferences were given by students largely in the middle and upper thirds of their classes. Seniors choosing public community colleges, technical colleges, and occupational schools ranked themselves mainly in the middle third of their classes.

F. REASONS WHY SENIORS DO NOT PLAN ON MORE SCHOOLING

Seniors whose plans did not include additional schooling were asked to indicate the most important reason. These reasons are shown in Table 12 by percent of response for all seniors and percent of response for only seniors with no plans for further schooling. For example, 1.6% of all seniors indicated plans did not include further schooling because it was too expensive. This represented 8% of the seniors who had no plans for further schooling. It can be seen that desire to work, expectation of military service, inadequate grades and reasons other than those listed were the major reasons why youth did not include further schooling in future plans.

TABLE 12

Reasons Why Youth Do Not Plan On Post-High School Schooling

	Percent Response	
Reason for Nonattendance	All Seniors	Seniors with no Further Plans for Education
Already Prepared for Job	2.0%	9.7%
Not Interested	1.8	8.7
Too Expensive	1.6	8.0
Want to Work	4.0	19.2
Grades Not Good Enough	2.5	12.0
Want to be a Housewife	1.8	8.7
Parents Don't Want Me to go	.1	.2
Military Service	3.4	16.5
Other	3.1	15.2
No Answer	.3	1.5
Total	20.6%	99.7%

G. EFFECT OF COSTS ON PLANS FOR CONTINUED EDUCATION

About a fifth of the seniors with plans for further schooling but not expecting to attend the school of first choice indicated they could not afford that school. This was about 10% of all seniors; 8.0% of seniors without plans for further schooling indicated further school attendance was too expensive. Roughly 16% of all seniors were affected in their choice of future plans for schooling by the cost factor. Approximately half of all seniors with plans for further schooling lived within commuting distance of the school or college they would most likely attend. About 77% of all seniors said they believed that if the first year of schooling beyond high school were tuition-free to all graduates, more students would continue their schooling; however, 9% believed such a policy wouldn't make any difference.

H. FACTORS RELATED TO PLANS FOR FURTHER SCHOOLING

An analysis of youth plans for further schooling and perceptions of youth about how parents felt about their continuing in school after high school graduation revealed a direct positive correlation. Higher percentages of youth with plans for further education had parents who wanted them to go than those seniors whose plans were negative or uncertain. A lower percent of seniors from broken homes (58%) had definite plans for continuing their schooling than the others (65%) and a higher percent of youth from broken homes (13%) than others (9%) do not include further schooling in their plans. A high positive relationship exists between claimed academic rank and plans to continue in school. Whereas 15% in the lower third had definite plans for further schooling, so did 87% in the top 10% ranking. Only 3% in the top tenth definitely had no plans for further schooling, compared to 33% in the lower third of their class.

Geographical location seems to be associated with some differences in the percent of seniors who plan on further schooling, particularly among youth of the lower levels of academic standing (See Table 13). Viewing Table 13, we can see that 89% of the seniors in the upper third by class rank in Area A (west-northwest) have plans that will definitely or probably include further schooling. Likewise, it can be seen that 61% and 35%, respectively, of seniors from the middle and lower thirds have plans for further schooling. Observing the data, we can ascertain differences in percent of expressed plans among the lower academic ranks, particularly. For example, while 17% of seniors in the lowest third in Areas B, E, and F had no plans for further schooling, this was the case for 29% in Areas A and C, and for 50% in Area D.

TABLE 13

Percent of Seniors by Plans for Further School and Academic Rank According to Geographical Area

Plans For Further Schooling	Academic Rank			
	Upper 10%	Upper 1/3-1/10	Middle Third	Lower Third
Yes or Probably				
Area A	89	89	61	35
Area B	90	85	66	62
Area C	100	91	75	43
Area D	96	81	66	37
Area E	91	81	67	64
Area F	89	77	60	44
No Or Probably Not				
Area A	6	5	23	29
Area B	4	3	13	17
Area C	--	3	8	29
Area D	4	7	22	50
Area E	4	8	19	17
Area F	--	10	16	17

I. INTERESTS OF SENIORS WHOSE PLANS DO NOT INCLUDE ADDITIONAL SCHOOLING

Seniors whose plans did not include additional schooling were asked if they would have interest in other types of training. Of these seniors, 33% would be interested in working as a paid apprentice while learning a trade; 33% were interested in on-the-job training with a company; and 18% would be interested in military service training. Thirteen percent would be interested in adult education or post graduate high school work at the high school level. These percents are, respectively, 5, 5, 3, and 2 percent of the total number of students. It appears that the largest number of youth whose plans do not include further education would be most interested in apprenticeship and on-the-job training.

J. OPINIONS ABOUT PUBLIC AND PRIVATE SCHOOLS

Inclinations of youth to select public or private schools depend in part upon the opinions they have formulated about them. Seniors were asked to indicate their opinions by indicating those characteristics they felt appropriate about each type of college. Responses are presented in Table 14. It can be seen that of all seniors, 7% and 30% respectively indicated that public and private colleges had too many rules and regulations. The remainder of Table 14 is to be interpreted likewise. In general, students perceived public colleges as large and impersonal, having more social activities and wider choice of course selections, and being better because of no church affiliations. Private colleges were viewed as too expensive by one-half of the students. Otherwise, private institutions were perceived as having too many rules and regulations, difficult admissions requirements, and instructors who were more interested in students. Students also viewed private colleges as giving a better education which resulted in a degree which means more.

TABLE 14

Seniors' Perceptions of Public and Private Colleges

Characteristic of College	Percent Public	Private
Too Many Rules and Regulations	7	30
Train You For Better Jobs	14	17
Too Expensive	4	54
Give You a Better Education	10	25
Degree Means More	7	23
Instructors More Interested In Students	9	33
Admission Difficult	6	38
Generally Large and Impersonal	47	4
More Social Activities	33	7
Better Because of No Church Affiliations	20	6
More Choice of Course Selections	36	8
Other	2	2

Of the seniors with a definite opinion on the matter, 51% indicated that if no difference in cost existed between public and private post-high school education, the one preferred would depend upon the school; 27% would prefer a public institution, and 22% would prefer a private institution. When preferences for public or private institutions were analyzed by academic rank, it was found that the largest percent of seniors who would choose a public institution were from the middle third by academic rank. The largest percent who would choose a private institution are in the upper 10% by academic rank. The largest percent of seniors who said that their preference for attending a public or a private school would depend upon the school were in the top 10% of their class. Interest in private institutions decreased as claimed academic rank decreased. The largest percent not interested in either were from the middle and lower academic ranks as were those who weren't sure.

K. SENIORS' PERCEPTIONS OF GUIDANCE HELP RECEIVED AND ADEQUACY OF HIGH SCHOOL PREPARATION

Youth attitudes toward continuing their education, confidence in the future, and support for a good educational system where they live are in part determined by the extent to which, as students, they perceive they have received the necessary help desired. Seniors were asked how much help they had received from school in making decisions about future plans. Fourteen percent indicated they had received all the help they needed, and 22% indicated that while they had received considerable help they could have used more. About a third (32%) said they had received some but not very much help and 29% said they had received almost no help. These evaluations were of the same order regardless of curriculum in which students were enrolled or academic rank in class. The largest percent of seniors whose plans did not include further schooling or who were unsure about plans felt the high school had given them almost no help in making decisions about future plans.

From Table 15 it appears that seniors in Area A believed they received the least help from school in making future plans and those in Area C believed they received the most help.

TABLE 15

Amount of Help Received from School in Making Decisions About Future Plans

Amount of Help Received	Percent of Students by Area Area A	Area B	Area C	Area D	Area E	Area F
A lot, all I need	6.5%	14.7%	29.5%	12.9%	11.7%	14.8%
Considerable	19.2	23.9	23.8	23.8	19.7	24.8
Some, not much	41.6	30.5	32.7	25.1	31.5	29.9
Almost none	32.8	27.0	13.0	36.2	32.0	27.7

In terms of what they planned to do after high school graduation, seniors were asked how well they thought the school was preparing them. The largest percent (48%) felt they were being prepared fairly well, that preparation was good in some areas but not very good in others. A fourth (26%) thought they either were not being prepared very well (training could be better in all areas) or that they were not being prepared at all well. Only 13% indicated they believed they were being prepared very well, that their high school was giving them just what they needed. With the exception of the southeast (Area D)area, higher percents of girls than boys indicated they were getting from high school just what they needed. An analysis of opinions about how well youth thought their high school was preparing them according to academic rank revealed that there was a positive correlation. The higher the academic rank, the better seniors felt the high school was preparing them for what they planned to do after graduation. Regardless of plan for further education, the largest (modal) percent felt that preparation was good in some areas and not in others, i.e., they were being prepared "fairly well."

Inadequacy of course offerings, indifference of teachers, poor guidance and irrelevancy of materials were major criticisms of high schools by youth not satisfied with their high school training. These were areas suggested for improvement.

Seniors were asked if they could get more training or schooling after high school in the area where they lived if they wanted it. A fifth (20%) indicated they could not get further training or schooling near home because the area has very few schools offering what they want. Over a third (35%) felt they could get the kind of training they wanted near home, and another 22% thought they "possibly could" since there were in the area good schools for some kinds of training but not for other kinds. Sixteen percent said they didn't know, and 7% did not respond.

L. MAJOR AREA OF STUDY INTEREST AND LONG-RANGE OCCUPATIONAL INTERESTS

High school seniors whose plans included going to school after graduation were asked to specify the area they wanted to study or major in. These are shown in Table 22. Also shown are the types of jobs seniors would most like to have ten years hence. Nearly three out of every ten seniors (27%) either did not know what field of further study they would pursue or did not respond. The largest incidence of expressed interest (22.5%) was for liberal arts and sciences. Teaching was picked by 9.9%, business by 9.2%, health science 6.8%, fine arts 5.5%, engineering 4.5%, and secretarial science by 3.8% as fields of interest for study. Other areas of major interest were vocational (3.5%), service occupations (2.5%), data processing (2.0%), and physical education (1.7%).

A fifth of all seniors did not indicate a long-range job interest. Teaching (16.2%) was specified by the largest (modal) percent of seniors as being the job they would most like to have ten years from now. Health, service, secretarial, and business occupations were of interest to 11.6, 7.3, 6.0, and 5.2 percent, respectively. Since categories used to classify long-range job interests were not consistently related to specific occupations or levels in a general field, it is difficult to make specific recommendations regarding needed cirricula. Observation reveals that a college education would be needed or desirable if about 54% of the seniors are to achieve their long-range occupational goal.

The largest percent of boys in the upper and middle levels of academic rank in high school expect to study engineering, while the largest percent in the lowest third plan to study business. The largest percent of girls in the upper and middle thirds of high school academic rank expect to be teachers, while the largest percent in the lowest third of high school classes plan on studying in the health field (possibly nursing).

TABLE 16

Areas for Future Study and Long-Range Occupational Interests by Percent

Area or Activity of Interest	Study Field	Long Range Job Interest
Liberal Arts and Sciences	22.5	--
Scientist	--	3.7
Engineering	4.5	4.0
Mathematician	--	.5
Teaching	9.9	16.2
Social Work	--	2.8
Fine Arts	5.5	4.5
Business	9.2	5.2
Journalism	--	.8
Secretarial	3.8	6.0
Health	6.8	11.6
Professional	--	4.8
Vocational	3.4	2.1
Construction-Building	--	.8
Data Processing	2.0	3.2
Service	2.5	7.3
Physical Education	1.7	--
Salesmanship	.1	--
Military Service	.4	--
Ecology	.8	.9
Housewife	--	5.1
Religion	.2	.5
Uncertain	.5	--
Don't Know--Unsure	19.0	3.1
No Response	7.7	16.9

M. SUMMARY AND CONCLUSIONS

The following summary statements and conclusions are supported by questionnaire data analyses:

1. While there are variances among the different geographical areas in population stability, seniors' length of residence indicated a relatively stable population.

2. Nearly half the seniors plan to live outside the state, but of these, only a tenth felt they had to leave in order to find desired employment opportunities.

3. A relatively high percent of seniors (23%) were living with someone other than both parents while attending school. Most (56%) seniors were enrolled in a college preparatory curriculum and of these 83% had definite plans for continuing their schooling. Most without plans for further schooling were in a general curriculum.

4. Questionnaire respondents possibly represent a sample biased in academic ability and in their plans for the future. Caution should be used in interpretations of differences among geographical areas or for the state as a whole with respect to proportions of seniors planning to go on to college.

5. Sixty percent of the seniors felt their family's income was at least comfortable or better. A relatively high percent of parents were reported to have pursued education beyond high school.

6. Sixty-four percent of all seniors had definite plans for continuing their schooling, and 9% had plans that would probably include more school. The largest percent of seniors planning on more school were in the northeast and southeast parts of Connecticut.

7. Of those seniors with definite plans for more schooling, about one-third plan to go out of the state, one fifth would distribute themselves among the independent institutions, and 55% would attend a state college, a public two-year college, or the state university. The percent planning to attend independent institutions constituted 14% of all seniors.

8. About 46% of all seniors expected to attend their college of first choice; 30% were unsure; and 5% did not think they would be able to attend the school of first choice. A fifth of the seniors not expecting to attend a school of first choice said they could not afford it, and 35% doubted that they would be accepted. The largest percent who doubt they will attend their college of first choice would expect to attend out of state colleges, a state college, or The University of Connecticut.

9. Four out of ten seniors indicated that the school they would most likely attend was within commuting distance; 12% indicated it was beyond commuting distance.

10. The largest percent of seniors selecting schools out of state, Wesleyan University, Trinity College, and Yale University said they were in the top 10% of their high school class. Seniors selecting The University of Connecticut were more apt to be in the top third minus the top 10%. Students opting for state colleges described themselves as ranking mostly in the middle and upper thirds of their class. Students pointing toward public two-year colleges primarily ranked themselves in the middle third of their high school class.

11. Major reasons for not planning on more school were desire to work, military service, and poor grades; lack of money would affect nearly 2% of all seniors. However nearly eight out of every ten seniors felt that if the first year beyond high school was tuition free, more youth would continue.

12. Geographical location, academic ability, and perceived parental aspiration for youth to continue were found to have a direct positive correlation with youth plans to continue their schooling.

13. Two-thirds of all seniors not planning on more school would be interested in on-the-job training or apprenticeship training.

14. Compared with public colleges, seniors viewed private institutions as somewhat better, more expensive, more difficult to get into, having too many rules and regulations, and having instructors who were more interested in students. Public institutions were viewed as generally large and impersonal, with more social activities, more courses to select from, and being better because of no church affiliation than private institutions.

15. If there was no difference in cost between public and private institutions, over half the seniors indicated their choice "would depend upon the school"; however, 22% would prefer an independent institution and 27% would prefer a public one.

16. The largest percent of seniors who would choose a private institution claimed to be in the upper 10% by academic rank.

17. Less than 15% of the responding seniors said that their high school had given them all the help they needed in making decisions about future plans or in preparing them well for what they planned to do after graduation.

18. Major criticisms of high schools were inadequacy of course offerings, indifference of teachers, poor guidance, and irrelevant materials.

19. Areas of greatest interest for further study were in order: (1) liberal arts and sciences, (2) teaching, (3) business, (4) health science, (5) fine arts, (6) engineering, and (7) secretarial science.

20. It is significant that a fifth of all seniors did not indicate a long-range job interest. Greatest long-range job interests were (1) teaching, (2) health service, (3) secretarial, and (4) business occupations. A college education would seem to be necessary for at least 54% of all seniors if they are to achieve their long-range occupational goals.

21. Engineering attracted the largest number of boys from the upper and middle levels of academic rank while business attracted the largest number from the lower third. Teaching attracted the largest number of girls from the upper two thirds, but health science attracted the interest of the largest percent of girls.

APPENDIX A

TABLES

TABLE 17

POPULATION AND LABOR FORCE CHANGES BY AREA
(COMBINED PLANNING REGIONS)
1969 OVER 1959

AREA	PLANNING REGIONS	Population			Labor Force		
		June, 1959	June, 1969	% Change	June, 1959	June, 1969	% Change
	Statewide	2,498,400	3,017,000	20.8	1,100,000	1,364,000	24.0
	Noninstitutional	2,484,600	3,006,200	21.1	---	---	---
A	Northwestern, Litchfield Hills, Housatonic Valley, and Central Naugatuck Valley Regions	401,800	498,600	24.1	162,900	194,200	19.2
B	Capitol, Central, and Mid-State Regions	729,400	889,600	22.0	361,000	445,700	23.5
C	Windham and Northeastern Regions	97,900	126,900	29.6	34,700	44,400	28.0
D	Southeastern Region	175,900	218,600	24.3	67,700	82,400	21.7
E	South Central and Conn. River Estuary Regions	425,100	489,600	15.2	194,300	225,100	15.9
F	Southwestern, Greater Bridgeport, and Valley Regions	652,500	782,900	20.0	279,400	338,300	21.1

Source: Connecticut Labor Department

TABLE 18

OCCUPATIONAL GROUPS OF THE TOTAL EMPLOYED CIVILIAN LABOR FORCE IN CONNECTICUT REGIONS, 1960

(Percent of Regional Totals)

Area	Planning Regions	Total	Professional Technical	Managers Officials Proprietors	Clerical	Sales	Craftsmen Foremen	Operatives	Service Ex-household	Other
	Statewide	100.0	12.9	8.1	16.0	6.8	16.0	21.2	7.0	12.0
A	Northwestern, Litchfield Hills Housatonic Valley Central Naugatuck Valley Regions	100.0	11.7	7.3	13.3	6.3	17.7	25.0	6.8	11.9
B	Capitol, Central and Mid-State Regs.	100.0	12.6	7.6	19.3	7.3	16.1	15.7	7.0	14.4
C	Windham and Northeastern Regions	100.0	11.3	5.2	11.0	4.9	15.4	28.8	7.6	15.8
D	Southeastern Reg.	100.0	13.1	7.2	13.5	6.1	18.3	19.9	9.0	12.9
E	South Central Connecticut River Estuary Regions	100.0	13.3	8.2	16.4	7.1	15.5	21.5	4.2	13.8
F	Southwestern, Greater Bridgeport, and Valley Regions	100.0	14.3	10.4	15.3	7.2	15.4	20.0	6.5	10.9

SOURCE: Connecticut Development Commission, Labor Force, Technical Report 132.

AREA A

SHIFT IN DISTRIBUTION OF EMPLOYMENT IN THE NORTHWESTERN, HOUSATONIC VALLEY, LITCHFIELD HILLS, AND CENTRAL NAUGATUCK VALLEY PLANNING REGIONS[a]

	December, 1965		December, 1969	
	Number	%	Number	%
Total Non-agricultural Employment	145,280[c]	100.0	169,030	100.0
Manufacturing	72,390[c]	49.8	80,300	47.5
Food	1,130	.8	990	.6
Textiles, Apparel	2,660	1.8	2,420	1.4
Lumber, Furniture, Paper	1,750	1.2	1,860	1.1
Primary Metals	7,280	5.0	6,640	3.9
Brass	5,950	4.1	5,290	3.1
Machinery, Electrical Equip.	20,660[c]	14.2	23,280	13.8
Fabricated Metal	11,850[c]	8.2	13,960	8.2
Instruments, Needles, Watches, Clocks	9,160	6.3	11,680	6.9
Printing, Publishing	910	.6	800	.5
Chemicals, Rubber, Misc. Plastics	7,470	5.1	6,550	3.9
Other Manufacturing[b]	9,530	6.6	12,120	7.2
Non-manufacturing	72,890	50.2	88,730	52.5
Construction	6,180	4.3	7,760	4.6
Transportation (Inc. R.R.)	2,670	1.8	2,730	1.6
Communication, Utilities	2,540	1.8	3,120	1.8
Trade	24,070	16.6	30,210	17.9
Wholesale	2,910	2.0	3,780	2.2
Retail	21,160	14.6	26,430	15.7
Finance, Insurance & Real Estate	3,630	2.5	4,030	2.4
Service	17,050	11.7	20,960	12.4
Government	16,750	11.5	19,920	11.8

[a] Estimated by aggregating the employment data for the Torrington, Danbury, Bristol, and Waterbury labor market areas.

[b] Includes: transportation equipment, stone, clay, and glass, tobacco, ordnance, aircraft parts, sporting goods, leather, petroleum refining

[c] Excludes workers idled due to labor-management disputes.

SOURCE: Connecticut Labor Department

TABLE 20

AREA B

SHIFT IN DISTRIBUTION OF EMPLOYMENT IN THE CAPITOL, CENTRAL, AND MID-STATE PLANNING REGIONS[a]

	December, 1965		December, 1969	
	Number	%	Number	%
Total Non-agricultural Employment	348,650	100.0	399,590[c]	100.0
Manufacturing	136,380	39.1	148,810[c]	37.2
Hardware	6,660	1.9	6,730	1.7
Food	3,850	1.1	4,020	1.0
Textiles, Apparel	6,070	1.7	5,450[c]	1.4
Furniture, Wood, Paper, Printing, Publishing	7,230	2.1	8,710	2.2
Chemicals, Rubber, Plastics	3,260	.9	3,500	.9
Primary & Fabricated Metals, Aircraft	60,920	17.5	64,700	16.2
Machinery	21,930	6.3	22,100	5.5
Electrical Equipment	8,900	2.6	8,950	2.3
Bearings	5,170	1.5	5,270	1.3
Transportation Equipment	600	.2	5,150	1.3
Measuring, Controlling Devices	2,220	.6	2,300	.6
Other Manufacturing[b]	9,570	2.7	11,130	2.8
Non-manufacturing	212,270	60.9	250,780	62.8
Construction	14,900	4.3	17,390	4.4
Transportation (Inc. R.R.)	6,280	1.8	7,270	1.8
Communications, Utilities	6,490	1.9	7,110	1.8
Trade	67,250	19.3	77,910	19.5
Wholesale	13,830	4.0	16,810	4.2
Retail	53,420	15.3	61,100	15.3
Finance, Insurance & Real Estate	36,440	10.4	42,120	10.6
Service	42,990	12.3	53,310	13.3
Government	37,920	10.9	45,670	11.4

[a] Estimated by aggregating the employment data for the Hartford, New Britain, and Middletown labor market areas.

[b] Includes: stone, clay and glass, photographic and sporting equipment, slide fasteners, tobacco, brushes, ordance, leather, piano parts, toys.

[c] Excludes workers idled due to labor-management disputes.

TABLE 21

AREA C

SHIFT IN DISTRIBUTION OF EMPLOYMENT IN THE NORTHEASTERN AND WINDHAM PLANNING REGIONS[a]

	December, 1965		December, 1969	
	Number	%	Number	%
Total Non-agricultural Employment	30,750	100.0	34,560	100.0
Manufacturing	13,840	45.0	13,200	38.2
Metallic	3,600	11.7	2,670	7.7
Nonmetallic	10,240	33.3	10,530	30.5
Textiles	4,970	16.2	4,610	13.3
Non-manufacturing	16,910	55.0	21,360	61,8
Construction	730	2.4	850	2.5
Transportation, Utilities, Communication	890	2.9	1,020	3.0
Trade	4,060	13.2	5,020	14.5
Wholesale	320	1.0	370	1.1
Retail	3,740	12.2	4,650	13.4
Finance, Insurance & Real Estate	470	1.5	570	1.6
Service	2,870	9.3	3,750	10.8
Government	7,890	25.7	10,150	29.4

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[a] Estimated by aggregating employment data for the Willimantic and Danielson labor market areas.

SOURCE: Connecticut Labor Department

TABLE 22

AREA D

SHIFT IN DISTRIBUTION OF EMPLOYMENT IN THE SOUTHEASTERN PLANNING REGION[a]

	December, 1965		December, 1969	
	Number	%	Number	%
Total Non-agricultural Employment	66,390	100.0	70,230	100.0
Manufacturing	29,110	43.8	28,460	40.5
Metallic	20,090	30.2	19,720	28.1
Nonmetallic	9,020	13.6	8,740	12.4
Non-manufacturing	37,280	56.2	41,770	59.5
Construction	2,260	3.4	2,030	2.9
Transportation (Inc. R.R.)	2,080	3.1	2,150	3.1
Communication, Utilities	1,080	1.7	1,170	1.7
Trade	12,170	18.3	13,670	19.5
Wholesale	1,730	2.6	1,890	2.7
Retail	10,440	15.7	11,780	16.8
Finance, Insurance & Real Estate	1,340	2.0	1,370	1.9
Service	7,490	11.3	8,630	12.3
Government	10,860	16.4	12,750	18.1

[a] Estimated by aggregating the employment data for the Norwich and New London labor market areas.

SOURCE: Connecticut Labor Department

TABLE 23

AREA E

SHIFT IN DISTRIBUTION OF EMPLOYMENT IN THE SOUTH CENTRAL AND CONNECTICUT RIVER ESTUARY PLANNING REGIONS[a]

	December, 1965		December, 1969	
	Number	%	Number	%
Total Non-agricultural Employment	187,280	100.0	199,610	100.0
Manufacturing	69,760	37.2	65,840	33.0
Ordnance	4,550	2.4	4,310	2.2
Food	2.040	1.1	2,240	1.1
Apparel, Leather	4,820	2.6	4,150	2.1
Paper	1,560	.8	1,560	.8
Printing, Publishing	3,470	1.9	3,530	1.7
Chemicals	2,730	1.5	2,470	1.2
Rubber, Misc, Plastics	2,950	1.6	3,380	1.7
Stone, Clay, Glass	1,150	.6	990	.5
Primary, Fabricated Metals	12,420	6.6	13,580	6.8
Machinery	5,440	2.9	4,310	2.2
Electrical Equipment	4,410	2.3	4,580	2.3
Silverware	4,270	2.3	4,140	2.1
Transportation Equipment	11,840	6.3	10,060	5.0
Other Manufacturing[b]	8,110	4.3	6,550	3.3
Non-manufacturing	117,520	62.8	133,770	67.0
Construction	10,440	5.6	9,710	4.9
Transportation (Inc. R.R.)	7,910	4.2	7,630	3.8
Communication, Utilities	6,640	3.5	7,640	3.8
Trade	35,900	19.2	40,200	20.1
Wholesale	8,670	4.6	10,140	5.1
Retail	27,230	14.6	30,060	15.0
Finance, Insurance & Real Estate	7,850	4.2	9,110	4.6
Service	30,140	16.1	36,590	18.3
Government	18,640	10.0	22,890	11.5

[a] Estimated by aggregating the employment for the New Haven and Meriden labor market areas.

[b] Includes: tobacco, textiles, lumber and wood, furniture and fixtures, paving and roofing materials, instruments, watches and clocks, toys.

SOURCE: Connecticut Labor Department.

TABLE 24

AREA F

SHIFT IN DISTRIBUTION OF EMPLOYMENT IN SOUTHWESTERN, GREATER BRIDGEPORT, AND VALLEY PLANNING REGIONS[a]

	December, 1965		December, 1969	
	Number	%	Number	%
Total Non-agricultural Employment	262,670	100.0	289,980[c]	100.0
Manufacturing	121,120	46.1	124,720[c]	43.0
Food	4,090	1.5	4,810	1.7
Textiles, Apparel	6,780	2.6	5,730	2.0
Printing, Publishing	5,210	2.0	6,270	2.2
Rubber, Misc. Plastic Prod.	3,600	1.4	3,420	1.2
Primary Metals	7,420	2.8	7,400	2.4
Fabricated Metal, Ordnance, Machinery	32,470	12.4	33,040[c]	11.4
Chemicals	3,110	1.2	4,070	1.4
Leather	1,200	.4	1,050	.4
Stone, Clay, Glass	2,150	.8	2,690	.9
Electrical Equipment	21,040	8.0	19,340[c]	6.7
Transportation Equipment	17,470	6.6	18,580	6.4
Instruments	4,870	1.9	6,040	2.1
Other Manufacturing[b]	11,710	4.5	12,280[c]	4.2
Non-manufacturing	141,550	53.9	165,260[c]	57.0
Construction	11,520	4.4	11,790	4.1
Transportation (Inc. R.R.)	5,710	2.2	6,410	2.2
Communications, Utilities	4,700	1.8	5,240	1.8
Trade	51,490	19.6	59,740[c]	20.6
Wholesale	8,770	3.3	10,350[c]	3.6
Retail	42,720	16.3	49,390	17.0
Finance, Insurance & Real Estate	8,350	3.2	9,980	3.4
Service	35,830	13.6	44,130	15.3
Government	23,950	9.1	27,970	9.6

[a] Estimated by aggregating the employment data for the Stamford, Norwalk, Bridgeport, and Ansonia labor market areas.

[b] Includes: tobacco, lumber and wood, furniture and fixtures, paper, petroleum products, watches, paving & roofing material.

[c] Excludes workers idled due to labor management disputes.

SOURCE: Connecticut Labor Department

TABLE 24 (Continued)

CONNECTICUT POPULATION AND EMPLOYMENT PROJECTIONS

			Employment		
		Population	Total	Manufacturing	Non-Manufacturing
AREA D					
(Southeastern Conn.)	*1960*	179,060	56,635	25,425	31,210
	1968	210,000	70,950	29,755	41,195
	1980	274,300	94,600	35,500	59,100
	2000	416,200	143,300	39,650	103,650
AREA E					
(South Central Conn., River Estuary)	*1960*	483,886	174,350	67,935	106,415
	1968	554,100	221,510	77,560	143,750
	1980	690,600	273,100	86,550	186,550
	2000	919,000	369,850	104,150	265,700
AREA F					
(Southwestern, Greater Bridgeport, Valley)	*1960*	617,576	220,330	108,020	112,100
	1968	715,900	274,240	125,790	148,240
	1980	862,200	338,350	128,100	210,250
	2000	1,100,000	458,250	139,550	318,700

TABLE 25

CONNECTICUT POPULATION AND EMPLOYMENT PROJECTIONS(1)

			Employment(2)		
		Population	Total	Manufacturing	Non-Manufacturing
CONNECTICUT	*1960*	2,535,234	912,525	408,470	504,055
	1968	2,965,100	1,164,475	483,915	680,560
	1980	3,724,600	1,460,950	533,650	927,300
	2000	5,124,000	2,054,800	635,500	1,419,300
AREA A					
(Northwestern Conn.,	*1960*	348,327	112,200	59,505	52,665
Litchfield Hills,	*1968*	413,660	141,590	67,545	73,085
Housatonic Valley,	*1980*	537,000	182,200	72,000	110,200
Central Naugatuck Valley)	*2000*	761,300	262,450	89,550	172,900
AREA B					
(Capitol,	*1960*	807,071	321,430	134,460	187,310
Mid-State,	*1968*	946,100	419,990	167,230	252,760
Central)	*1980*	1,191,700	528,600	193,350	335,250
	2000	1,695,000	754,450	240,000	514,450
AREA C					
(Northeastern,	*1960*	96,168	26,340	13,005	9,835
Windham)	*1968*	121,270	35,775	15,670	13,370
	1980	162,600	43,300	18,150	25,150
	2000	230,500	65,200	22,600	42,600

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(1) Prepared by Connecticut Interregional Planning Program, distributed by the Office of State Planning, Department of Finance and Control, February, 1970

(2) 1960 and 1968 employment statistics exclude farm and domestic workers, 1980 and 2000 projections are all inclusive

TABLE 26

Annualized Growth Rates of the State's Various Economic Sectors

1966 - 1980

Economic Sectors	% Per Year Annualized Growth
Nondurable Goods Industries	
Food processing	0.0%
Textiles	-4.7
Apparel and leather	0.4
Printing and publishing	1.9
Chemicals	3.9
Rubber and plastics	0.5
Other nondurables	0.8
Durable Goods Industries	
Primary metals	-0.6%
Fabricated metals	0.8
Non-electrical machinery	2.2
Electrical equipment	3.2
Transportation equipment	1.0
Instruments	3.8
Ordnance	1.4
Lumber, furniture, stone, clay and glass	0.6
Miscellaneous durables	-1.7
Services	
Contract construction	2.8%
Transportation	0.8
Communications & utilities	0.9
Trade	1.7
Business and financial services	2.5
State and local government	3.1
Federal government (in Connecticut)	4.4
Personal, recreational, and professional services	3.9

TABLE 27

Connecticut Projected Employment
By Major Occupational Groups and Selected Occupations

Occupations	Numbers 1968	Numbers 1975	Percent Change 1968-75
Professional, Tech. & Kindred	197,900	234,560	18.5
Engineers, Technical	31,540	37,510	18.9
Aeronautical	4,710	5,930	25.9
Chemical	1,180	1,180	0.0
Civil	2,810	3,480	23.8
Electrical	4,260	4,860	14.1
Industrial	4,950	6,200	25.3
Mechanical	6,830	7,740	13.3
Metallurgical	910	1,020	12.1
Mining	100	100	0.0
Technical, n.e.c.	5,790	7,000	20.9
Natural Scientists	3,980	5,170	29.9
Technicians, Exc. Medical & Dental	21,400	25,940	21.2
Draftsmen	6,750	7,280	7.9
Surveyors	1,030	1,360	32.0
Air Traffic Controllers	60	60	0.0
Radio Operators	330	430	30.3
Other, n.e.c.	13,230	16,810	27.1
Medical & Other Health Workers	32,390	41,160	27.1
Dietitians & Nutritionists	620	690	11.3
Nurses, Professional	15,900	19,910	25.2
Technicians, Medical & Dental	4,110	6,310	53.5
Veterinarians	230	330	43.5
Chiropractors & Therapists	1,310	1,800	37.4
Teachers	46,010	49,980	8.6
Elementary	20,900	20,270	-3.0
Secondary	13,990	15,980	14.2
Social Scientists	1,550	1,810	16.8
Other Professional, Tech. & Kindred	61,030	72,990	19.6
Accountants & Auditors	9,320	9,990	7.2
Airplane Pilots & Navigators	590	630	6.8
Artists, Athletes & Entertainers	3,900	4,410	13.1
Designers, exc. Des. Draftsmen	2,290	2,540	10.9
Librarians	2,440	2,640	8.2
Photographers	1,090	1,170	7.3
Social & Welfare Workers	3,460	4,680	35.3
Clerical & Kindred Workers	223,020	253,930	13.8
Stenos., Typists & Secretaries	55,540	63,230	13.8
Office Machine Operators	11,370	15,870	39.6
Other Clerical & Kindred	156,110	174,830	12.0
Accounting Clerks	8,020	8,650	7.8
Bookkeepers, Hand	16,630	18,200	9.4
Bank Tellers	3,860	5,260	36.3
Cashiers	10,050	13,730	36.6
Mail Carriers	4,150	5,120	23.4
Postal Clerks	3,610	3,750	3.9
Shipping and Receiving Clerks	6,150	5,540	-9.9
Telephone Operators	6,160	6,460	4.9
Clerical & Kindred Workers, n.e.c.	97,480	108,120	10.9

TABLE 27 (Continued)

Connecticut Projected Employment
By Major Occupational Groups and Selected Occupations

Occupations	Numbers 1968	1975	Percent Change 1968-75
Managers, Officials & Proprietors	106,770	116,680	9.3
Conductors, Railroad	440	430	-2.3
Creditmen	1,020	1,380	35.3
Purchasing Agents	3,130	3,650	16.6
Postmasters & Assistants	270	260	-3.7
Man., Offic., & Prop., n.e.c.	101,910	110,960	8.9
Sales Workers	90,560	101,530	12.1
Insurance Agents & Brokers	9,630	10,330	7.3
Real Estate Agents & Brokers	3,250	3,660	12.6
Other, n.e.c.	77,680	87,540	12.7
Craftsmen, Foremen & Kindred	206,130	214,670	4.1
Construction Craftsmen	43,400	44,860	3.4
Foremen, n.e.c.	34,320	36,650	6.8
Metalworking Craftsmen exc. Mechanics	38,870	34,240	-11.9
Mechanics & Repairmen	49,580	57,970	16.9
Airplane Mechanics & Repairmen	3,690	3,860	4.6
Motor Vehicle Mechanics	11,590	13,280	14.6
Office Machine Mechanics	810	1,030	27.2
Radio & TV Repairmen	1,630	1,790	9.8
Railroad & Car Shop Mechanics	180	170	-5.6
Other Mechanics & Repairmen	31,680	37,840	19.4
Printing Trades Craftsmen	6,790	6,880	1.3
Transportation & Public Utility Craftsm.	5,720	5,800	1.4
Other Craftsmen & Kindred Workers	27,450	28,270	3.0
Service Workers	119,310	142,840	19.7
Protective Service Workers	17,390	20,820	19.7
Firemen & Fire Protection	4,090	5,040	23.2
Police, Marshals, Sheriffs	6,780	9,020	33.0
Guards, Watchmen	6,520	6,760	3.7
Waiters, Cooks & Bartenders	28,850	35,760	24.0
Other Service Workers	52,470	63,260	20.6
Nurses, Practical	4,160	5,860	40.9

Source: Connecticut Labor Department

APPENDIX B

QUESTIONNAIRE

SAMPLE QUESTIONNAIRE

DIRECTIONS: Your school is participating in a statewide study of higher education. Your answers to the following questions will be important in evaluating and planning higher educational opportunities in your community. Please answer each question that appears below. Most questions are to be answered by placing the number of the answer you select in the space in front of the question number. Please answer each question as accurately and completely as possible. This is not a test, and the answers you give will not affect your grades. Your answers will not be connected with you in any way. Note we do not ask for your name. Responses will be tabulated and combined with responses of your classmates.

Please read carefully each of the questions listed below. Put your answers in the blank space in front of the number of each question. Thank you very much for your help in this important study.

First, we would like to know a little about you.

_____ 1. Are you a boy or a girl?

(please select one)
1 Boy
2 Girl

_____ 2. How long have you lived in this school district?

(please select one)
1 Less than one year
2 One to two years
3 Three to five years
4 Six to ten years
5 Over ten years

_____ 3. With whom do you live while you go to school?

(please select one)
1 With my mother and father
2 With my mother (or mother and stepfather)
3 With my father (or father and stepmother)
4 With neither my mother nor my father

Now, some questions about school and your future plans.

_____ 4. In which high school course, program, or curriculum are you enrolled?

(please select one)
1 Agriculture
2 College (university) preparatory
3 Commercial or business education
4 General
5 Homemaking
6 Vocational or industrial arts
7 Other *(write in)*_____________________

_____ 5. If your senior class were divided into groups based on academic ranking, in which group do you think you would be placed?

(please select one)

1 Upper 10%
2 Top third, but not upper 10%
3 Middle third
4 Lower third

_____ 6. Do your plans include going to college, business school, or vocational school after you get out of high school?

(please select one)

1 Yes
2 Probably
3 Probably not
4 No
5 I am not sure

_____ 7. Below is a list of schools. If your future plans include going on beyond high school, what school or college would be your first choice? *If you do not plan to go on beyond high school, write the number one (1) in the space at the left. (Please give only one answer.)*

1 Probably will not go on
2 Connecticut State College (Central, Western, Eastern, or Southern)
3 Albertus Magnus College
4 An occupational school (nursing, secretarial, trade, technical, etc.)
5 Hartford College for Women
6 University of Connecticut (either main campus at Storrs or a branch campus)
7 Annhurst College
8 Yale University
9 A public community college
10 University of Hartford
11 New Haven College
12 Connecticut College
13 Quinnipiac College
14 University of Bridgeport
15 Post Junior College
16 Wesleyan University
17 St. Joseph's College
18 State Technical College (Thames Valley, Norwalk, Hartford, or Waterbury)
19 Trinity College
20 Fairfield College
21 Silvermine College of Art
22 Sacred Heart University
23 Mitchell College
24 Other Connecticut school or college *(please name)*
_____
25 College or school outside of Connecticut
26 I really can't say

_____ 8. *If your future plans do not include going on beyond high school, enter the number one (1) in the space at the left.* If your future plans include going on beyond high school, what area of study will you pursue or major in?

Please specify: _____

_____ 9. *If you do not intend to go on beyond high school, enter the number one (1) in the space at the left.* If your future plans include going on beyond high school, is your first choice school the one you will most likely attend?

(please select one)

1 I probably will not go on to school
2 Yes
3 No
4 I am not sure

_____ 10. *If you do not intend to go on beyond high school or if you expect to attend your first choice school, enter the number one (1) in the space at the left.* If you think you might not attend your first choice school, what will most likely keep you from attending it? *(Please select one.)*

1 I probably will not go on to school or I probably will attend my first choice school
2 I have not been (will not be) accepted
3 I have not been able to get (will not get) a scholarship
4 I cannot afford to go there
5 Other

_____ 11. *If you do not intend to go on beyond high school or if you expect to attend your first choice school, enter the number one (1) in the space at the left.* If you think you might not attend your first choice school, what school or college will you most likely attend? *(Please give only one answer.)*

1 Probably will not go on or will attend 1st choice school
2 Connecticut State College (Central, Western, Eastern, or Southern)
3 Albertus Magnus College
4 An occupational school (nursing, secretarial, trade, technical, etc.)
5 Hartford College for Women
6 University of Connecticut (either main campus at Storrs or a branch campus)
7 Annhurst College
8 Yale University
9 A public community college
10 University of Hartford
11 New Haven College
12 Connecticut College
13 Quinnipiac College
14 University of Bridgeport
15 Post Junior College
16 Wesleyan University
17 St. Joseph's College
18 State Technical College (Thames Valley, Norwalk, Hartford, or Waterbury)
19 Trinity College
20 Fairfield College
21 Silvermine College of Art
22 Sacred Heart University
23 Mitchell College
24 Other Connecticut school or college

____

25 College or school outside of Connecticut
26 I really can't say

_____ 12. *If your future plans do not include getting further education beyond high school, enter the number one (1) in the space at the left.* If your future plans include going on beyond high school, is the school or college you will most likely attend within commuting distance of your home?

(please select one)

1 I do not plan to go on
2 Yes
3 No
4 Don't know yet

_____ 13. *If your plans do include additional schooling, put the number one (1) in the space at the left.* If your plans do not include additional schooling, why aren't you considering additional schooling? *(Please select the most important reason.)*

1 I do plan to get further schooling
2 I don't need any more schooling - I'm prepared for what I want to do
3 I'm not interested in more schooling
4 It's too expensive
5 I'd rather work
6 I don't have the grades for more schooling
7 I want to become a housewife
8 My parents/guardians don't want me to
9 I'll probably go into military service
10 Other *(please state)* ____________________

_____ 14. *If your plans do include additional schooling, put the number one (1) in the space at the left.* If your plans do not include additional schooling, do you think you personally would have any interest in any one of the following kinds of training or schooling if it were available to you? *(Please pick the one you are most interested in.)*

1 I plan to take additional schooling
2 Work as a paid apprentice while learning a trade
3 Military service training
4 On-the-job training with a company
5 Correspondence study
6 Adult education classes (held at night)
7 Post-graduate high school work at the high school level
8 I am not interested in any of these listed

_____ 15. If the first year of schooling beyond high school were tuition-free to everyone completing high school, do you think more students would continue their schooling?

(please select one)

1 Yes
2 No
3 I don't know

_____ 16. What one job would you most like to have ten years from now?

Please specify: ____

_____ 17. How much help have you received from your school in making decisions about your future plans?

(please select one)

1 A lot of help; all I need
2 Considerable help, but I could use more
3 Some help, but not very much
4 Almost no help

_____ 18. In terms of what you plan to do after high school, how well do you think your high school is preparing you?

(please select one)

1 Not at all well: virtually no training
2 Not very well: training could be better in all areas
3 Fairly well: preparation is good in some areas but not very good in others
4 Very well: it is giving me just what I need
5 I don't know, because I am not sure what I will do

_____ 19. *If you are generally satisfied with your high school training, enter the number one (1) in the space at the left.* If you are not satisfied with your high school training, what do you think, specifically, is the one most important way your high school could have prepared you better?

____

____

____

____

_____ 20. If you wanted to get more training or schooling beyond high school, could you get it in the area where you now live? *(Please select one.)*

1 Yes, this area has good schools for the kinds of training I want.
2 Possibly, this area has good schools for some kinds of training, but not for others.
3 No, this area has very few schools for what I want
4 Can't say.

Now we would like to ask you a little bit about public and private schools for schooling beyond high school.

People's opinions differ quite a bit as to the advantages and disadvantages of public and private colleges. We would like to ask you to give us your opinion by checking as many of the following statements as you think are appropriate. (*Please, just check the responses you think appropriate. This is the only section where you will not put the number of your response in front of the question.*)

		Public Colleges		Private Colleges
21.	____	Have too many rules & regulations	____	Have too many rules & regulation
22.	____	Train you for better jobs	____	Train you for better jobs
23.	____	Are too expensive	____	Are too expensive
24.	____	Give you a better education	____	Give you a better education
25.	____	Degree means more when graduate	____	Degree means more when graduate
26.	____	Teachers/professors will be more interested in the students	____	Teachers/professors will be more interested in the students
27.	____	Are too hard to get into	____	Are too hard to get into
28.	____	Are generally large & impersonal	____	Are generally large & impersonal
29.	____	Have more social activities	____	Have more social activities
30.	____	Are better because they have no church affiliations	____	Are better because they have church affiliations
31.	____	Have more course selections to choose from	____	Have more course selections to choose from
32.	____	Other (*please state*) __________ ______________________________	____	Other (*please state*) __________ ______________________________

_____ 33. If there were no difference in cost between public and private school education beyond high school, which would you prefer?

(*please select one*)

1 Public
2 Private
3 It depends on the school
4 Neither one - not interested
5 I am not sure

A few more questions about yourself.

_____ 34. Where do you eventually plan to make your home?

(please select one) 1 In Connecticut 2 Outside Connecticut

_____ 35. *If you plan to live in the state, enter the number one (1) in the space at the left.* Why you you plan to leave Connecticut?

(please select one)

1 I don't plan to leave Connecticut
2 To take a particular kind of job that I probably can't get in Connecticut
3 I would like to live in another part of the country
4 Family reasons
5 Health reasons
6 I just want to travel
7 Other *(please state)*______________________

_____ 36. *If you plan to leave the state, enter the number one (1) in the space at the left.* Do you think you are likely to find the kind of job you want in the area you now live in?

(please select one)

1 I plan to leave the state
2 I am sure I can
3 I can probably find a good job in this area
4 I doubt if I can find a good job in this area
5 I can't say

Now, a little bit about your folks.

What is the highest level of education attained by your father/guardian and your mother/guardian? *(Please enter a response for each category. The response for father/guardian should be entered opposite the space on the left next to the number 38 and the response for mother/guardian should be entered opposite the space on the left next to the number 39.)*

_____ 37. Father/Guardian

1 Some high school or less
2 Completed high school
3 Business or vocational school
4 Some college
5 Completed college
6 Attended or completed graduate school
7 I don't know

_____ 38. Mother/Guardian

1 Some high school or less
2 Completed high school
3 Business or vocational school
4 Some college
5 Completed college
6 Attended or completed graduate school
7 I don't know

_____ 39. How do your folks/guardians feel about your continuing school after high school?

(please select one)

1 Both want me to go
2 One wants me to go
3 They want me to go if I want to go
4 They don't want me to go
5 I don't know

_____ 40. Indicate the one phrase that best describes your family's income.

(please select one)

1 Frequently have difficulty making ends meet
2 Sometimes have difficulty in getting the necessities
3 Have necessities but not many luxuries
4 Comfortable but not well-to-do
5 Well-to-do
6 Wealthy

Thank you for filling out this questionnaire.

____
41 42 43 44 45